Journal of Developmental Reading

A Quarterly for the Improvement of Reading

Volume V, No. 1

High School Reading–1960 — H. Alan Robinson and Dan S. Dramer

Implications of a Chemical Theory — Patricia M. Carrigan

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Volume V, Number 1 Autumn, 1961

CONTENTS

H. ALAN ROBINSON and DAN S. DRAMER
High School Reading—1960 3

PATRICIA M. CARRIGAN Broader Implications of a Chemical Theory of Reading Disability 15

ROGER L. WOOD Attrition as a Criterion for Evaluating Non-Credit College Reading Programs 27

REGINALD L. JONES and EARL L. VAN WHY
The SRA Reading Laboratory and Fourth Grade Pupils 36

RALPH C. STAIGER Medicine for Reading Improvement 48

REVIEWS 52

Nancy Larrick *A Teacher's Guide to Children's Books*
by Olive S. Niles

Chicago Area Reading Association *Developmental Reading in the Content Areas*
by B. H. VanRoekel

David L. Shepherd *Effective Reading in Science. Effective Reading in Social Studies*
by Robert T. Taylor

Gladys Gardner Jenkins *Helping Children Reach Their Potential*
by Gladys L. Persons

NEWS, LETTERS, AND NOTES 58

Hallack McCord Background Music: A Possible Aid in Teaching Adult Reading Improvement 60

Donald E. P. Smith Slow-Starting Students: Whose Responsibility 61

Sister M. Fridian Developmental Reading at Saint Francis College 63

Daniel L. Heftel Reading Training in a Counseling Service 66

Warren D. Fortenberry Magazine and Newspaper Reading of Junior College Freshmen 67

Charles R. Colvin What Is Being Done in College Reading Programs in Pennsylvania 70

JOURNAL OF DEVELOPMENTAL READING

A Quarterly
for the improvement of Reading
in High School, College, and Adult Programs
edited by the
Developmental Reading Staff, Department of English
Purdue University, Lafayette, Indiana

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Journal of Developmental Reading is published four times a year, Autumn, Winter, Spring, and Summer, by the Developmental Reading Staff, Department of English, Purdue University. Editorial and Business address: Department of English, Purdue University, Lafayette, Indiana. Subscription rate: $3.50 a year—$3.00 to teachers. Reprint rates upon request. Manuscripts should be addressed to the Editor and accompanied by return postage. Second class mailing privilege authorized at Lafayette, Indiana. Copyright, 1961, Purdue Research Foundation.

High School Reading—1960

H. ALAN ROBINSON and DAN S. DRAMER

This is the third in a series of annual summaries of the professional literature on junior and senior high school reading. It covers reports published in 1960 as well as earlier reports which have come to the attention of the writers. Previous summaries in this series may be found in the WINTER and AUTUMN, 1960, issues of the JOURNAL OF DEVELOPMENTAL READING. Readers are invited to notify the authors of material appropriate for review in future articles.

THE CASUAL READER who prefers not to review all of the evidence might like to know that:

- Reading is a feminine activity.[20]
- "Among young people today . . . to be well read has suddenly become the thing that is done."[22]
- "Real learning requires time for reflection. Reading that is hurriedly done may result in memoriter learning or superficial understanding."[21]
- "Each reading task requires a different kind of thinking, depending on the material and the reader's purpose. Life is too short to make a detailed, logical analysis of every paragraph. Overemphasis on critical interpretation may make some meticulous pupils over meticulous."[35]
- "All of the desirable features necessary for a successful reading program for retarded readers are found in the industrial arts area."[10]
- "Intelligence test scores do not really predict with any degree of accuracy those students who will benefit most from a reading improvement program."[26]
- "Recently a hue and cry has been raised in favor of totally individualized reading programs, in spite of the fact that

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we have long acknowledged the interdependence of the four language arts. In the give-and-take of group discussion of selections read together, youthful thoughtfulness burgeons. Why write off so rich a source of reading development?"[14]

- "Reading in the secondary school is a still unexplored territory. Guide posts of research are about non-existent and the secondary-school faculty that breaks ground in the field of reading is indeed pioneering."[9]

Current Emphasis

There appears to be a trend toward serious consideration of critical and creative reading at the secondary level. Although there is still a number of reports on isolated reading improvement programs, there is a growing stress on incorporating critical and creative reading skills into the overall curriculum. There is still a great deal of concern about word analysis and basic comprehension skills; however, critical reading and thinking are being treated very seriously in the various content areas. Critical reading does not appear to be reserved for the college-bound alone; authors reported treating critical reading in vocational courses and in dealing with retarded readers. Critical reading, as a teachable factor, received its share of attention in recreational reading programs.

The reader will find that a number of books or periodicals listed in the bibliography are not summarized or mentioned in this article. Because of space limitations, the authors have tried to abstract parts of articles or chapters, which, in their opinion, present findings of most interest to the majority of readers.

Topics Investigated

The literature reviewed in this article and/or listed in the bibliography treats the following topics relating to secondary school reading instruction:

Achievement	5, 13, 20
Appreciation	2, 5, 14, 16
Audio-Visual Aids	2, 12, 30
Book Reports	5

ROBINSON, DRAMER

Creative Reading	14, 21
Critical Reading and Thinking	1, 3, 5, 9, 14, 16, 33, 35, 36
Curricula	5, 10, 18, 27, 32
Diagnosis	4, 7, 33
Eighth Grade	6, 14, 24
Eleventh Grade	20, 26, 37
Emotional Factors	12
English	5, 16, 17
Evaluation of Programs	13, 25, 30
Gifted	6, 11, 22
Grouping	13, 22, 32
Individualized Reading	6, 14, 19
Informal Reading Tests	32, 33
Intelligence	11, 20, 25, 26
Library	2, 14, 22, 30
Literature	2, 5, 16
Materials	2, 3, 8, 10, 11, 13, 16, 18, 21, 23, 25, 27, 30, 32, 33, 37
Ninth Grade	6, 25
Periodicals	2, 27, 30
Programmed Instruction	32
Programs	10, 13, 16, 18, 19, 25, 30, 37
Rate	30, 33, 37
Reader's Background	1, 3, 20
Reading Instruments	5, 14, 24, 25, 37
Recreational Reading	22, 27, 30
Remedial Reading	12, 15, 16, 38
Reading Retardation	10, 11, 20
Role of the Reading Teacher	9, 16, 18
Seventh Grade	6, 13, 24, 30, 32
Sex Differences	5, 20
Slow Learner	23
Specific Reading Skills	4, 6, 11, 13, 15, 16, 18, 23, 32, 33, 35, 36
Standardized Tests	7, 13, 20, 24, 25, 26, 30, 32, 33, 37
Teacher Training	9, 25, 34
Techniques	4, 5, 8, 11, 16, 17, 18, 19, 21, 23, 36

Tenth Grade	5, 10
Twelfth Grade	37
Word Analysis	4, 32

Critical Reading

Strang[35] pointed out that thinking is an inherent part of the reading process for all kinds of students and in all kinds of situations. "Each of the word recognition skills—context clues, structural analysis, phonic analysis and even the use of the dictionary—requires seeing relationships and making judgments as to the relevance of similar forms or meanings to the word in question." "Locating sources of information on a given topic may require an amazing amount of thinking." Certain types of skimming often require ". . . more concentration than would be necessary in a slower, more careful reading of the same material." Outlining, summarizing, and paragraph reading are experiences in thinking and logical reasoning. Thoughtful reading should result if there is purpose for reading, if there is time to review background experiences, and time to think while reading.

McCallister[21] suggested the stimulation of creative reading through the utilization of a number of techniques. He emphasized purposeful reading by asking students to use some of the main ideas of a lecture to which they had listened as the focal point for reading in several sources in order "to amplify their understanding of the points under consideration." He indicated other methods for assimilation and use of learning, such as planned group discussion aimed at organization of ideas into hypotheses, generalizations, or conclusions; time set aside for reflection either before or after reading; the devising of opportunities "for applying the information gained through reading."

Anderson[1] felt that readers' reactions to what they read are influenced by the writers' backgrounds, the readers' backgrounds, the readers' standards for appraisal, their recognition of the devices writers use, and their knowledge of the basic forms of written discourse.

Thomas[36] described a critical reading laboratory, organized by high school students, to emphasize the dangers of confused

thinking. Their laboratory is a collection of material illustrating such concepts as false analogies, conclusions lacking proof, name-calling passages, and statements out of context. The lab is divided into six sections: (a) hidden motives; (b) propaganda; (c) validity of authority; (d) types of reasoning; (e) evidence needed to prove facts; (f) influence of advertising. Students bring clippings to place in the various sections of the lab and ask classmates to weigh the material, raise questions, and come to grips with the thinking process. The lab aims at getting students "to enjoy the luxury of making up their own minds instead of having their minds made up for them."

In his plea for teaching critical reactions, Burfield[37] cautioned senior high school and junior high school teachers about relying completely on the questions accompanying selections in texts or workbooks. He pointed out that teacher "awareness of student needs and abilities should prompt the formation of increasingly more challenging questions."

Studies

Mazurkiewicz[20] investigated ". . . some social-cultural conditioning factors as possible contributing factors to the retardation in reading found in boys since it was believed that degree of achievement in reading might be related to attitudes developed by social and cultural environments." To obtain information, a male-female attitude activity inventory was completed by 157 eleventh-grade boys who also took a test of mental maturity and a reading test. Their fathers completed the M-F Attitude Activity Inventory, too. The large majority of fathers and sons classified reading as a "mostly feminine activity." Boys who classified reading as feminine tended ". . . to be slightly less able in reading . . ." than those who classified reading as masculine. To a varying extent, the boys' attitudes were related to fathers' attitudes; a greater positive relationship was evident when a boy was in the vocational curriculum.

To refute those critics who make unfavorable comparisons between the reading habits of today's youngsters and those of children in the "good old days," Mersand and Maggio[22] presented data from seventy-three large city libraries. Their ques-

tionnaire asked librarians to compare circulation today and years ago in *classics,* good *moderns,* and *good non-fiction.* In general, total circulation today is up over the circulation of the 20's and 30's. Librarians felt that young people are reading more worthwhile books than even before. The main factors thought to account for the favorable attitude of young adults to reading were (a) increasing difficulty of getting into college; (b) post-Sputnik emphasis on trained minds; (c) enrichment programs and advanced college programs for the gifted.

Gowan and Scheibel[11] presented an extensive bibliography of studies of the reading ability of the intellectually able. They felt that the relative reading retardation of gifted children is an urgent problem but readily remedied once it is understood that most gifted children are seriously retarded in terms of their own potential.

Ramsey[26] undertook a study of the test results of 138 eleventh-grade students ". . . to determine which of several variables were predictive of success in improving various important reading abilities." Students were given the California Test of Mental Maturity; Cooperative Reading Test, C_1; and Diagnostic Reading Test, Word Attack, Silent. On the basis of substantial evidence, the following conclusions were drawn:

"1. Intelligence test scores are highly indicative of reading ability.
2. Neither total I.Q., language I.Q. nor non-language I.Q. scores of the California Test of Mental Maturity are predictive of gains that will be made in either reading vocabulary, speed, or comprehension.
3. Gains in word attack as measured by the Diagnostic Reading Test, Word Attack, Silent, Upper Level, are not productive of gains in reading vocabulary, speed or comprehension.
4. The discrepancy between intelligence and reading ability is only slightly indicative of the improvement that will occur in general reading ability."

Strang[34] reported on seventy-seven replies from colleges and universities to a questionnaire about reading courses offered in the teaching of reading in secondary school and col-

lege. Thirty-eight described one or two courses. Reports varied from ". . . a rather limited single course to a sequence leading to a master's degree, professional diploma, or doctorate." In the main, two types of programs are offered. One program is for the high school or college teacher who is responsible for the teaching of reading in his subject or in a developmental course. The other is a course for the remedial reading teacher, consultant or clinician.

Reading Programs

Ferrerio[10] decided that, "All of the desirable features necessary for a successful reading program for retarded readers are found in the industrial arts area. . . . There is intrinsic interest in the area—the desire of children to make things, to engage in manipulative activity, to learn about processes, to explore, to experiment." Ferrerio described a program involving two adjustment classes composed of retarded and "reluctant" retarded pupils. The program consisted of such activities as experience charts dealing with the use of tools and shop equipment, flash cards, matching games, and the use of concrete objects. The use of concrete, interesting and useful material made reading, a task hitherto boring or frustrating to these youngsters, "an experience in which they engaged with enjoyment and success."

The teacher of English or language arts can not teach the reading skills required for reading the materials of trade subjects in the vocational high school, according to Levine.[18] The reading teacher, Levine felt, could not be expected to have the necessary knowledge of the technical vocabulary, idioms, or concepts. Nor could a reading teacher offer the practical applications that should be the outcome of many trade publications of the "how-to" type. Levine felt there is little transfer-of-learning of the reading skills learned in a literary context to a technological, factual context, even when the same skills are required. Levine advocated the shop teacher's teaching reading through the job sheets which guide the pupils' work from day-to-day. A well-planned lesson should involve motivation, vocabulary and concept study, oral reading, discussion and comprehension checks, and application.

Marcatante[19] defined the "programmatic fallacy" as attributing "unproven qualities to new school programs. A case in point," he stated, "is the reaction to the individualized reading program. One teacher may attribute panacea-like powers to it, while another teacher will maintain it is a waste of time. Both these teachers may stand in error." Mercantante described his own experience with an individualized program in an adjustment class in which the children acquired skill, confidence, and a favorable attitude toward reading which he feels no other type of program could have yielded.

In organizing a seventh grade reading enrichment program, Schiavone[30] placed emphasis on developing insight into the need for the course, and had classes formulate their own objectives through class discussion. Stress was placed on rate, vocabulary, comprehension, spelling, use of the library, free reading, and newspaper and magazine reading. In evaluating the program, students expressed most enjoyment for those activities in which they worked in the library and participated in free reading.

Another instance of progress through insight was presented by Hinds.[12] In a mental hygiene approach to reading, viewing such films as "Feelings of Hostility" and "Readers All, Citizens All" helped a pupil realize some of the reasons for his early reading failures, and why he felt and acted as he did. After becoming aware of his problems, the subject profited from Fernald Method instruction and work in phonics.

Neville[25] reported that a voluntary reading improvement course conducted primarily for ninth graders resulted in "greater gains as a result of the special instruction than would normally have been made without it." Candidates for the course were those students who scored one to three years below grade level on the California Achievement Test, and showed capacity to achieve as measured on the California Test of Mental Maturity. The program served as a laboratory for teacher training. Three teachers participated each year on a rotating basis that permitted the introduction of a new teacher each year.

Thornton[37] reported significant gains in rate of reading in favor of a twelfth grade experimental group using accelerators

and other materials over a control group not receiving instruction. There was no significant difference, however, in achievement in vocabulary and comprehension. As a result, it was decided that future courses would de-emphasize mechanical aids, and would instead concentrate on purposeful reading, flexibility, reading for main ideas and details, intensive reading, and vocabulary development. When such a course was organized, the results and the opinions of experienced teachers seemed to indicate important gains, not only in rate, but in comprehension and vocabulary development.

Courtney[4] pointed out the many limitations of a word perception program in the teaching of secondary school students. In considering teaching structural analysis in grades ten through fourteen, he stated that "it seems unsound to establish set rules for syllabication," that "any absolute 'rules' for syllabication only made the process an end in itself." Courtney stressed use of context and proper use of the dictionary. He suggested that students "must be guided through the minute analysis of a text, applying all his various skills, and finding the right dictionary definition to fit the particular context." He felt that the process must be repeated enough to make a definite impression. "Insight into the reading process is essential to reading improvement with older students. This must be our aim, in word perception especially," stated Courtney.

Shafer[32] suggested the use of informal appraisal techniques to assess the junior high students' word-perception abilities and disabilities. He further suggested that the content area teacher not only needs to present special concepts and vocabularies, but must produce most of his own material "and explore new methods and curriculum patterns." He indicated that students in the junior high school might, in the future, be able to learn word-perception skills as programmed in a teaching machine.

Devere[6] reasoned that since a junior high school student is much less likely to have his attention wander "if the selection is within the range of his ability to read and is related to his personal interests . . . the reading program in grades seven through nine should be individualized." Sprietsma[33] indicated that in senior high and junior college the teaching of comprehension proceeds from reading for details, to subordinate ideas,

to main ideas (literal and inferred), and finally to critical reading. He also emphasized rate as a factor, but only as related to purpose for reading.

Early[9] suggested a slow rate of speed and careful faculty study before launching a reading program in the secondary school. Teachers need to think through the ingredients in such a program. All teachers, not English teachers alone, need to examine the curricula to ascertain not only *what* they teach, but *why*. Following this, they can consider *how*. "Fitting a reading program to an outmoded curriculum is as incongruous as adding power steering to a Model *T*."

Bibliography

The following list includes many references not mentioned in the article. For the convenience of those who wish to read further on the subject, but who do not care to examine all of the references in the bibliography, the following selections are listed:

Readers especially interested in reading instruction at the junior high school level will want to read 1, 2, 6, 10, 13, 14, 24, 30, 32.

Those who are especially interested in reading instruction at the senior high school level should read 3, 4, 5, 8, 9, 11, 16, 17, 18, 21, 25, 26, 31, 33, 37.

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Broader Implications of a Chemical Theory of Reading Disability

PATRICIA M. CARRIGAN

EDUCATIONAL PSYCHOLOGISTS interested in the disabled reader have viewed the subject of their concern in various ways—most often from the standpoint of the symptoms which constitute reading disability, or in terms of certain *characteristics* (physical, perceptual, behavioral, psychodynamic, etc.) which are found with some regularity among cases of reading disability. I should like to look at the disabled reader from still another standpoint, as belonging to a larger population whose members share a common impairment in the ability to learn. In this group we find the *slow learner,* whose handicap is not confined to the area of reading; the *hyperkinetic* individual, whose distractibility makes it hard for him to concentrate on anything long enough to learn it; the *delinquent,* who may present a variety of learning problems, all aggravated by his frequent absence from the classroom—by his own choice, or someone else's; the *neurotic,* enmeshed in his own problems and having little energy to devote to anything else; the more severely *psychotic,* etc.

Because learning plays an important role in adaptation, failure in learning can be looked upon more broadly, perhaps, as a failure in adaptation, stemming from a functional or structural deficit in some part of the adaptive equipment—in perception, for example, or in intellectual endowment, or in physical energy, or in personality. Since reading disability may reflect a deficit in *any* of these areas, an adequate theory must handle them all. In so doing, it ought to shed some light

Patricia M. Carrigan was formerly a staff member of the Reading Improvement Services at the University of Michigan but is now a PHS Research Fellow at the State Hospital, Ypsilanti, Michigan. *This paper in its original form was presented for a symposium on "Characteristics of Disabled Readers" at the annual convention of the American Psychological Association, 1959.*

on adaptive deficits in general and, hence, on other disorders marked by such deficits. What I should like to do, then, is to consider some of these other disorders in the light of a particular theory of reading disability.

The so-called chemical theory of reading disability grew out of a research program at the University of Michigan reading clinic concerned with the *severely disabled reader*—a retarded reader who fails to make substantial gains in reading with prolonged and intensive remedial instruction, and despite the appropriate attention to ancillary problems (vision, hearing, parental pressure). Failure to respond to such a regime suggested that for these cases, at least, the origin of the reading problem must be sought in some phenomenon central to the functioning of the individual—something far-reaching enough in its effects to account for the great variety of symptoms and behaviors found among severely retarded readers. Our research led eventually to consideration of the mechanism of synaptic transmission, culminating in a theoretical model based on current notions about the chemical mediation of nerve impulses.

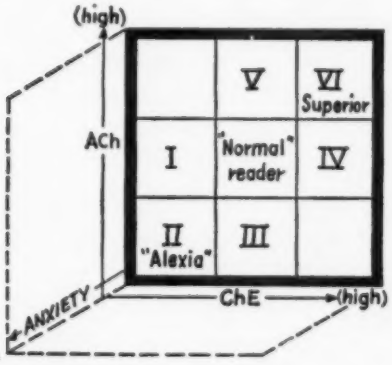
Synaptic transmission appears to depend on two kinds of substances. One, which might be called a *circuit-maker,* is responsible for establishing temporal connections between nerve cells, so that an impulse can move along from one cell to the next, i.e., cross the synapse. The other kind of substance might be termed a *circuit-breaker;* it destroys or inhibits the action of the circuit-maker, severing the connection and freeing the cells to participate in the transmission of a new impulse. Behaviorally, the action of the circuit-maker is analogous to the fixation of attention on some stimulus, that of the circuit-breaker to the *dis*engagement of attention and its subsequent freedom to move elsewhere. Just what chemical substances mediate these important functions is a problem of current concern to neurophysiologists.[1] Of the many substances suspected of involvement in synaptic transmission, acetylcholine (ACh) and cholinesterase (ChE) have been among the most widely investigated; available evidence points to these two enzymes as the crucial substances in at least some parts of the nervous system. In describing the model (see

Figure I), therefore, the abbreviations ACh and ChE will be used to designate circuit-making and circuit-breaking activity, respectively; it should be borne in mind, however, that other substances are almost certainly involved.

Turning to the model, a case has been made previously[2] for assuming that the relative rate of production of ACh and ChE varies among individuals, that such variations have predictable effects on perceptual and cognitive behavior,[3] and that those effects are manifested in performance on perceptual

Figure I

Hypothesized Acetylcholine (ACh) and Cholinesterase (ChE) Production in Atypical Readers



READING DISABILITY SYNDROMES (Groups I-V)

I Quiet, placid; hypometabolic, tends toward obesity. *Reading behaviors:* slow reading, unable to blend, poor visual discrimination.

II Immature, unenergetic, unresponsive; retarded in bone age. *Reading behaviors:* virtually no reading skills, poor short-term memory, extremely limited sight vocabulary.

III Hyperactive, distractible, excitable, explosive; short, slender, slightly retarded in bone age. *Reading behaviors:* good blending, guesses easily from context, many substitutions and omissions, frequent reversals, brief memory for words.

IV Flighty, sociable, relates easily, talkative, spontaneous, enthusiastic; slender, short. *Reading behaviors:* good context reader, inconsistent word recognition, comprehension superior to word-attack skills.

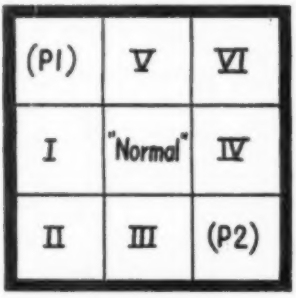
V Slow, placid, methodical, perfectionistic, withdrawn, slow to relate; tall, slender, blond (boys). *Reading behaviors:* slow reading, unwilling to skip unknown words, unable to use context.

Figure II

Possible Relationship between ACh-ChE Production, Anxiety, and Various Adaptive Disorders: Speculations from the Theoretical Model

PSYCHOSIS
Depression
Catatonic schizophrenia
Paranoid schizophrenia

"Passive-aggressive" personality
Obsessive-compulsive neuroses
Phobias
Neurotic depression:
Delinquency



Slow learner

(IV anxious):
Anxiety states

Psychopathic personality
Delinquency
(III anxious):
Hyperkinetic disorders

PSYCHOSIS
Manic states
Some schizophrenias

and cognitive tests. From their performance on such tests, it has been argued that *"normal"* readers can generally be thought of as producing normal quantities of ACh and ChE and that *atypical* readers—advanced as well as retarded—owe their atypicality to the production of abnormal amounts of one or both substances.

These considerations give rise to the first two dimensions of the theoretical model. The first dimension, *balance,* has to do with the relative amounts of ACh and ChE available; the

second, *concentration level,* is concerned with the amount of each substance produced singly. The relationship between these two dimensions can be seen in Figure I. In the middle of this diagram, we find the *"normal"* reader, *balanced* at a *normal level* of production. Balance at a *high* level—i.e., overproduction of both ACh and ChE—appears to be linked with advanced maturation and characterizes the *superior reader* (Group VI). Balance at a *low* level, on the other hand, is associated with delayed maturation and with the reading symptoms traditionally subsumed under the rubric *alexia* (Group II). Other reading disability syndromes are thought to reflect a chemical *imbalance*—normal production of *one* of the two substances—ACh or ChE—and either an excess or a deficiency in the other. Groups I and V are seen as having available more ACh than ChE, i.e., as being *ACh-dominant.* It will be noted, however, that the ACh-dominance of Group V is conceived as stemming from excessive ACh, and that of Group I from insufficient ChE. Similarly, Group II and IV appear to be *ChE-dominant*—IV because of too much ChE, III because of too little ACh.

The third dimension of the model, *anxiety,* needs no introduction. Without going into its chemical substrate, anxiety seems in most cases to exert a circuit-breaking effect similar to that of ChE. It should be borne in mind, however, that anxiety interacts with the other two dimensions in complex ways; it may be disruptive in ChE-dominant groups, beneficial in ACh-dominant groups.

Thus, we have a three-dimensional model—ACh-ChE *balance* and *concentration level,* and *anxiety.* The utility of the model in handling reading disability has been considered elsewhere;[4] suffice it to say that within its framework, the symptoms and many of the correlates of reading disability can be accounted for. With this background, let us now see how the model might apply to other disorders marked by deficits in the adaptive functions. Space prohibits extensive consideration of all of them; I should like to look first and foremost at the area of mental illness, reserving until the last a few brief comments about some of the other disorders which have been mentioned.

It will be noted that two of the "cells" in the Figure I diagram are unlabeled—the two cells corresponding to the theoretical extremes of chemical imbalance. These two cells are unlabeled because the research which gave rise to the model failed to disclose any individuals whose test scores would place them at the extremes. Some time later, however, a member of our staff had occasion to examine a very withdrawn boy recently released from a state mental hospital; this boy's scores placed him in one of the vacant cells—the one which, in Figure II, is labeled P1. During the following year, we saw at the reading clinic two or three other cases whose tests scores were consistent with extreme imbalance—all with a history of longstanding emotional disturbance requiring some kind of professional help. Later, in a study of adolescent mental patients, we were able to classify a third or more of our experimental sample as either P1 or P2. At the same time, I had begun to be impressed by the frequency with which adult psychotics at another institution obtained unusually extreme scores on some of the tests which were considered diagnostic of imbalance in our population of severely disabled readers. The apparent limitation of such extreme scores to mentally disturbed individuals suggested that the theoretical model might have some relevance to mental illness.

The behaviors predicted by the model for the P1 and P2 extremes add weight to this possibility. P1, with too much ACh and too little ChE, ought to exhibit characteristics similar to those of Group V, but untempered by V's normal ChE production. Extreme withdrawal, emotional unresponsiveness, inflexible behavior, tendencies toward perseveration, and a general slowing down of behavior ought to be prominent in this group. In the perceptual and cognitive spheres, some success might be expected in handling simple, discrete stimuli and, perhaps, previously learned material, but the spontaneous integration of such units and materials into previously unlearned "wholes" ought to be virtually impossible. Perception should thus be slow and fragmented, thinking concrete and disconnected. P2, on the other hand, ought to appear as an exaggeration of the Group III individual and, hence, char-

acterized by extreme impulsivity, hyperactivity, liability of affect, distorted perception, and confused, disorganized thinking marked by alogical connections and inappropriate generalizations.

It is readily apparent that the behaviors predicted for P1 and P2 are in many respects diametrically opposed; yet they include in common severe disturbances in perception, cognition, and affect—the earmarks of psychosis. Indeed, some of the principal psychotic disorders seem to lend themselves to classification at one extreme or the other, in terms of their symptoms. Inability to respond to the environment and retardation of behavior, speech, and thinking, characteristic of *psychotic depression,* would seem to be P1 phenomena; so would the stereotypy, mutism, and stupor of *catatonic schizophrenia,* the suspiciousness and systematized delusions found in chronic *paranoid schizophrenia,* etc. On the other hand, the hyperactivity, unstable perception, and fluid affects and associations characteristic of *manic disorders* would seem to belong at the P2 extreme along with the marked impulsivity, disorganization, and "looseness" of thinking found in some *schizophrenias.* It is suggested, therefore, that psychotics might be classified into two broad groups according to the *direction* of ACh-ChE imbalance (with further subgroup differentiation along other dimensions—physiological, psychodynamic, etc.), and that psychosis itself is related to the *severity* of that imbalance. How might an extreme imbalance in the chemical mediators of neural transmission be implicated in the causation of psychosis? It will be recalled that psychosis, along with reading disability and certain other disorders, has been linked with a failure or deficit in some part of the adaptive equipment. Disturbances in neural transmission must necessarily have a profound effect on the operation of this equipment, and, presumably, the more severe the disturbance, the more profound its effect will be. An extreme imbalance in the substances mediating transmission might, therefore, contribute to the development of a psychosis by placing such extreme limitations on the adaptive capacities of the individual that he cannot cope successfully with the complexities of his existence. To be sure, the unique qualitative features of the illness will

reflect the *nature* of these complexities; however, the fact that the individual must resort to a psychotic solution might well be a consequence of the limitations imposed by chemical imbalance.

That chemical transmitter substances may be involved in the production of mental illness is not a new idea; Hippocrates attributed certain mental aberrations to a disturbance in the humors of the brain. In the past few years, there has been considerable interest in the possible role of the ACh-ChE mechanism in *schizophrenia.* It has been suggested that schizophrenia is related to *insufficient* ACh,[5] to *excessive* ACh,[6] and even to deviations in either direction.[7] Rubin, in fact, discusses alterations in the ACh-ChE *balance,* although as Krech, Rosenzweig, and Bennett have pointed out, his research deals only with ACh levels, and his conception of imbalance thus rests on the rather questionable assumption that ChE levels are the same for all subjects.[8] Nevertheless, his study provides positive evidence on the ACh side, in suggesting that ACh levels are higher in some schizophrenics, lower in others, than those found in nonpsychotic subjects. Other evidence is meager but generally favorable from the standpoint of the theoretical model. Injections of ACh produce catatonic-like behavior in animals[9] and are reported to be beneficial in the treatment of some schizophrenics, least effective with catatonics.[10] Injections of ChE into the brains of catatonics is, however, followed by symptomatic relief, notably increased reactivity and adaptability.[11] Diisopropyl fluorophosphate (DFP), a powerful anticholinesterase substance, brings about improvement in manic patients and some schizophrenics; its effects are detrimental in depressed patients and other schizophrenics.[12]

So much for the relevance of the model to psychosis; how about the less incapacitating disorders classified as *neurosis?* It has recently been suggested by one investigator[13] that neurotic disorders can be attributed to excessive ACh—a position, which, it might be added, has some empirical support. For example, the drug benactyzine, which blocks ACh, is effective in alleviating the repetitive chains of thought associated with obsessive-compulsive disorders; it has also been found useful in the treatment of phobias.[14] However, abnormally high serum

ChE has been reported for some neurotic syndromes, notably anxiety states.[15] While serum ChE is not directly comparable to the ChE involved in neural activity, the possibility of some relationship between the two substances cannot be ruled out at present. Perhaps, then, an imbalance favoring either ACh or ChE may be associated with neurosis, as well as psychosis, with the difference of one degree. Test score profiles for hospitalized neurotics are seldom more extreme than those of disabled readers; in some instances, they are very similar to those of the latter group. For example, several adolescent patients with a diagnosis of "passive-aggressive personality" have been tested on the diagnostic battery used at the reading clinic; the profiles of these patients are indistinguishable from those of the disabled readers in Group V.

It is suggested, therefore, that the chemical imbalance associated with neurosis may be less extreme than that posited for psychosis, and that the adaptive capacities of the neurotic are consequently less severely curtailed—i.e., so that he has a somewhat wider range of solutions available for dealing with the stresses of his life situation. The particular form taken by the neurosis may in a broad sense be determined by the *direction* of the imbalance; the aforementioned empirical links between excessive ACh and obsessive-compulsive disorders, and excessive ChE and anxiety states, are predictable from the model. However, within these broad limits, an infinite number of variations is possible, as a consequence of the unique psychodynamic and situational factors operating in the individual case.

Turning briefly to some of the other disorders which have been mentioned, what has been said about neurosis is probably applicable in a general way to *delinquency,* the various manifestations of which share a common symptom—acting out against society. Here, too, factors in the life situation loom important; yet the inability of the delinquent to adjust to that situation and the particular kind of delinquent behavior in which he engages, may lend themselves to explanation in terms of the model. The principal symptoms of the *hyperkinetic disorders* — distractibility, overactivity, impulsiveness, erratic and explosive behavior—are those which characterize the anx-

ious Group III individual. A number of hyperkinetic children seen at the reading clinic—some previously diagnosed as brain-damaged, though without a demonstrable lesion—have produced test profiles typical of Group III. Finally, those who would call the *slow learner* defective may be justified, if they will grant that the defect may be chemical in nature. Test scores of slow learners characteristically place them in one of the "deficiency" groups, most commonly I or II.

It seems, then, that many disorders marked by a failure in adaptation can be handled within the framework of the theoretical model presented here. It should be evident, however, that the model cannot be assessed on the basis of its apparent economy, and that its ultimate validity must be determined empirically. If the model is essentially correct, it is nevertheless certain to be oversimplified, and the necessary refinements must come from future research. If the model is inadequate—in part or in its entirety—perhaps the research which proves it so will point to a more adequate one. As it stands, the model appears useful as a means of ordering a great many diverse phenomena, and it has, I think, some important implications for educational psychology, which I'd like to mention in closing.

First, I think it is fair to say that until recently, at least, treatment of the various disorders of adaptation have been virtually limited to *modification of the environment.* The hyperkinetic child is placed in a nonstimulating atmosphere, the slow learner in a special classrom, the severely disturbed psychotic in a hospital. The neurotic may be helped by psychotherapy; however, the effectiveness of treatment often depends on how successfully the environment—(and the attitudes of those who comprise it)—can be modified. These approaches are important, but the fact remains that they are not always effective, and, more important, *they accomplish little or nothing in the way of altering the individual's capacity for maladaptive behavior.* The distractible child, for instance, is not made less so by removing him from the source of his distraction. One important implication of the model, then, is that the concept of treatment must be extended to include *modification of the individual.* That such modification holds great promise is suggested by the encouraging results of the use of

medication with severely disabled readers[16] and by the demonstrated effectiveness of tranquilizers, energizers, and various other drugs in management of psychotic illnesses.

A second important implication concerns the currently *necessary* emphasis on treatment. As the model is further refined—or replaced, as the case may be—we should be better able to specify the salient features in the behavior of the individual, in his development, in his family history, etc., which are associated with the later development of these disorders. We should then be in a better position to recognize them in their incipient stages and, hence, to prevent them from becoming full-blown. In time, then, the emphasis may be shifted from treatment to prevention.

Finally, it should be apparent that such goals will not be attained without cost. These accomplishments hinge on our willingness *as a group* to undertake the necessary research—in itself a Herculean task. They depend further on our willingness *as individuals* to reject such dead-end diagnoses as "He isn't trying," to become acute observers—knowing both what to look for, and what to do when we find it—and, perhaps most challenging, to educate our colleagues in the various professions to do likewise.

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[2] D. E. P. Smith and Patricia M. Carrigan, *The Nature of Reading Disability* (New York: Harcourt, Brace, 1959).

[3] Excessive ACh ought to be associated with prolonged fixation on a given stimulus, and hence with a considerable amount of reverberatory activity in the corresponding neural circuits; subsequent stimuli, presented while this activity is going on, would presumably not be attended to and, hence, would not be perceived. An individual with excessive ACh would be expected to perceive slowly but accurately, to show facility in dealing with small, discrete units and in remembering previously learned material and to have difficulty with immediate learning of complex material and with integrative tasks requiring simultaneous consideration of various stimulus patterns, events, aspects of a given situation, etc. Too much ChE, on the other hand, would be expected to result in a premature breaking of neural circuits, such that stimuli are not

attended to long enough for meaningful perception to occur. In an individual with excessive ChE, perception might be described as a series of fleeting impressions, quickly obtained and often as frequently forgotten. Such an individual should exhibit an excellent capacity for integration, by virtue of the ease with which stimuli, events, etc., can be dealt with in quick succession. However, to the extent that concepts are built upon incomplete or inaccurate percepts, they may be inappropriate or, at least, overgeneralized.

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Attrition as a Criterion for Evaluating Non-Credit College Reading Programs

ROGER L. WOOD

EVALUATION OF COLLEGE READING IMPROVEMENT PROGRAMS has been typically based on the amount and permanence of gains students have made on standardized reading tests. More recently, changes in academic performance have been employed. However, despite numerous improvements in experimental design over the past decade, problems of experimental control have persisted. Consequently the validity of conclusions based on the results of evaluation studies has been doubtful.[1]

Use of attrition or dropout rate as a criterion of program effectiveness has yet to be tried. Dropouts have been studied in the public schools, in colleges, and in therapeutic settings, usually for the purpose of predicting premature separation. Implicit in such studies, however, is evaluation of the educational or therapeutic program itself.

Dropouts in college non-credit, non-tuition reading programs were mentioned by Smith and Tate[2] and later by Thompson[3], but apparently no serious attempts to study the psychological or instructional factors associated with attrition have been reported. The writer became aware of the problem at the University of Michigan Reading Improvement Service where over a two-year period, an average of twenty-two percent of the students who had enrolled in the seven-week reading course did not complete it. The writer polled sixty-three representative college reading clinics in 1955 and found that the dropout rate at Michigan is comparable to that in other service-type reading programs. The lowest rates were reported for those programs offering credit, but special fees had little effect on dropouts.

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The writer and his colleagues speculated that the proportion of dropouts might provide valid evaluation data in non-credit, non-tuition programs such as that at Michigan. The usual extrinsic motivation from fees and grades is absent, and the motivation provided by success and support during the learning experience may be critical factors in the student's completion of the voluntary program. If it can be shown that dropping a reading course is related to personality characteristics of the student or to absence of extrinsic motivation to complete it, attrition rate cannot be used for evaluation of the course, beyond suggesting a lack of flexibility to student needs. On the other hand, if attrition is associated primarily with the functioning of a course itself and with forces in the instructional situation, attrition may be considered one criterion for determining program effectiveness. Furthermore, if dropouts were asked their reasons for dropping the course, correspondence between their reasons and objective evidence concerning their class experiences would serve to validate such student opinion as another criterion of course effectiveness.

The resulting study, designed to predict attrition, provided evidence concerning the relationships between dropout rate and extra- and intra-class variables.

The following hypotheses were derived from observations and investigations by the writer and his colleagues over a four-year period:

1. *Attrition is associated with measurable personality and motivational characteristics of the students.*
2. *Attrition is associated with certain variables in the instructional situation.*

Subjects were a representative sample chosen from the 701 students enrolled during 1955-56 in four series of classes, each series meetings for six or seven weeks. At the end of the course all students were categorized as *shoppers, dropouts,* or *remainers* according to the following arbitrary definitions: 1) The *shopper* enrolled in the course and appeared for one or more of the first three classes, but no more. The study was not primarily concerned with this student. 2) the *dropout* came to class at least once following the third meeting, but did not attend any of the final three sessions. This student, considered as not fulfilling

his commitment to the class, was the primary concern of the study. 3) The *remainer* completed the course, as inferred from his attendance at one or more of the final three meetings of the class.

Procedures: Hypothesis 1

In an earlier exploratory study by the writer, two small samples of dropouts and remainers differed on several factor scores of the *16 P.F. Test*.[4] Smith and Tate also expressed interest in personality differences between dropouts and remainers in their report on the use of the tachistoscope in reading improvement.[5] Therefore, the *16 P.F. Test* was administered to all registering students, along with the SA-S Senior Scales.[6]

The latter scales had been developed earlier from questionnaire items differentiating slow and fast improvers in Michigan reading classes.[7] Two nearly orthogonal dimensions of personality, extraversion-introversion and stability, which can be described as relative freedom from anxiety, are inferred from scores on the scales. Interactions between the two dimensions appear to be more important than the dimensions singly. Individuals were placed into one of four polar types according to their position on the two dimensions. Type I is both extraverted and stable, Type II is introverted and stable, Type III is the introverted and unstable person, and the Type IV person is both extraverted and unstable.[8]

Motivation was inferred from two sources: referral to the reading service by advisers, and academic need. At registration all students were asked whether they had been referred or had come on their own initiative. Academic need was inferred from records for the previous semester obtained for all subjects except entering freshmen, whose high school percentile ranks were used. It was predicted that the more needy students would tend to be remainers. The direction of the effect of referral, however, was not predicted since student reactions to the referring authority may vary, and the self-referred student may indeed be the one with a true interest in the course.

Results: Hypothesis 1

Table I summarizes the findings concerning personality and motivational variables associated with attrition. Since the de-

sign of the larger investigation required two equivalent groups, only half the original population is represented in Table I. A study of the table reveals that dropouts differed from remainers in only one personality characteristic, Factor N (sophistication) of the 16 *P.F. Test* ($P<.05$). Since one difference significant at .05 may be expected to occur among twenty comparisons

TABLE I

Differences Between Dropouts and Remainers
On Personality and Motivational Variables

Variables	Dropouts	Remainers	Test	
Personality	N=54	N=249		
16 P.F. Test Factors (Mean)				
A	9.29	9.08	t	.378
B	10.03	9.72	t	1.261
C	18.38	18.70	t	.654
E	12.13	12.10	t	.051
F	13.90	13.16	t	1.400
G	11.01	11.62	t	1.267
H	14.66	14.42	t	.309
I	9.01	8.54	t	.967
L	9.37	8.47	t	1.895
M	10.03	9.48	t	1.063
N	11.16	10.32	t	2.245*
O	7.68	7.43	t	.347
Q_1	10.59	10.03	t	1.556
Q_2	9.81	9.66	t	.284
Q_3	9.87	10.57	t	1.203
Q_4	8.72	9.20	t	.738
SA-S Scales Scores				
SA Means	14.11	14.34	t	.30
S Means	17.46	18.81	t	1.50
Type I Frequency	17	80		$\chi^2$3.253
Type II Frequency	11	68		
Type III Frequency	21	72		(df=3)
Type IV Frequency	15	47		
Extrinsic Motivation				
Academic Achievement.				
Grade Point Average	2.26 (N=35)	2.22 (N=122)	t	.890
High School Percentile	82.06 (N=18)	83.50 (N=98)	t	.269
Referral.				
Self Frequency	46	178		
Other Frequency	8	74		$\chi^2$3.637**

* Significant at .05

** A later test with a larger sample showed a difference significant at less than .01, indicating a small tendency for referred persons to remain.

when there are no true differences, the hypothesis that there are true differences between dropouts and remainers in either personality or motivation was not accepted, and the null hypothesis was retained. A later test, using the total sample (N=701), did, however, show a significant tendency for referred persons to complete the course ($P<.01$), although this tendency was not substantial as indicated by the phi coefficient, .11.

Procedure: Hypothesis 2

Hypothesis 2, that attrition is associated with certain variables of the instructional situation, was tested by comparing dropouts and remainers on a number of measures of reading improvement class variables.

1. Progress in reading and comprehension was inferred from the students' records of their scores on daily practice exercises.[9] All dropouts (N=101) were compared with a twenty percent sample of all remainers for the year (N=94). An efficiency score was computed for each practice exercise, consisting of the product of the rate in words per minute and the percent score on the ten multiple-choice comprehension questions. For example, a selection read at three hundred words per minute, with ninety percent comprehension, yields an efficiency score of 270. For each student, the score on his initial selection was used as a base, and the mean increase over this initial score for each succeeding exercise constituted the "rate of gain" for that student. It was predicted that the mean "rate of gain" would be lower for those who became dropouts than for those who completed the course.

2. At the third class meeting students were asked to rate confidentially their instructor's ability to help them with their reading problem on a four-point scale, varying from "incapable" to "extremely capable." It was predicted that those who later dropped the course would be those who gave lower ratings to their instructors.

3. The same questionnaire asked students to indicate whether they had close friends in the same class, in another reading class, or no friend in any reading class. The rationale for this question was the observation of the writer that those who were members of such friendship subgroups appeared to drop out

more frequently than others. This observation corresponded to the suggestion of Cartwright and Zander that subgroups will disrupt the larger organization when the goals of the smaller groups are incompatible with those of the larger.[10] It was predicted that dropouts would occur most frequently among those students reporting friends enrolled in either their own or other reading classes during the same series.

4. It was predicted that dropouts would occur most frequently among students enrolled in 8 A. M. and 5 P. M. classes because of student and instructor consensus that classes at these hours are inconvenient.

5. It was predicted that dropouts would occur most frequently in classes taught by inexperienced instructors, since students are sensitive to evidence of instructor inefficiency and insecurity.

TABLE II

Differences Between Dropouts and Remainers on Variables Associated with the Instructional Situation in Reading Classes

Variables		Dropouts	Remainers		Tests
Rate of Gain		(N=101)	(N=94)		
Means		33.47	55.85	t	1.522*
Rating of Instructor					
Means		5.45	5.66	t	1.196*
Class Subgroups					
Friend in class	Frequency	57	209	χ^2	6.825**
No friend in class	Frequency	55	313		
Time of Class					
8 A.M. & 5 P.M.	Frequency	17	22	χ^2	12.665***
All others	Frequency	48	227		
Instructor Experience					
Inexperienced	Frequency	19	55	χ^2	1.234
Experienced	Frequency	45	194		

* Significant at .10
** Significant at .05
*** Significant at .01

Results: Hypothesis 2

Table II shows a summary of the tests of each of the predicted differences between dropouts and remainers with respect to intra-class variables. Specific directional predictions were made for each of the five variables, and all differences were in the predicted direction. Both rate of gain and ratings of their

instructors were lower for dropouts than for remainers, significant at less than .10. Dropouts were more frequent among students who had friends in classes ($P<.03$), and in classes meeting at 8 A.M. and 5 P.M., ($P<.01$). Least significant was the tendency for dropouts to occur in classes taught by inexperienced instructors, ($P<.15$). While the relationships were not uniformly high, they were consistent, giving considerable support to the hypothesis that attrition is associated with the functioning of the course itself.

The final step was one of comparing the evidence found under Hypothesis 2 with the statements of persons who were dropouts. Questionnaires were sent to all students categorized as dropouts at the end of the course. The major request was, "Please state the reason(s) for discontinuing the class. Feel free to be completely frank. Do not sign your name." Replies were received from seventy-eight percent of those polled. While the questionnaire purported to be anonymous, the writer arranged to identify each respondent.

TABLE III

Analysis of Variance for Rate of Gain and Three Categories of Questionnaire Replies

Source of Variation	Sum of Squares	df	Mean Square	F	P
Between Groups	47,152	2	23,576	2.215	NS
Within Groups	1,043,252	98	10,645		
Total	1,060,404	100	10,604		

Replies were categorized as *pressure of other activities* (42 percent), *dissatisfied with the course* (27 percent), and *miscellaneous* (31 percent).

An analysis of the variance in "rate of gain" in reading efficiency among the dropouts offering the three kinds of replies above is presented in Table III. The F ratio of the "within group variance" to the "between group variance" was 2.215, which is insufficient for significance. However, the direction of differences among the groups corresponded to subjective responses of students about their reasons for dropping out of the

course. The mean of the "rate of gain" scores for the dissatisfied was seven, for those blaming the pressure of other activities it was twenty-four, and for all others it was sixty-two.

Conclusions

Hypothesis 1, that attrition is associated with certain measured personality and motivational characteristics of students, was not confirmed by the findings. Hypothesis 2, that attrition is associated with certain measures of the instructional situation. received moderate confirmation. The evidence presented in Table III suggested that students' reasons for dropping corresponded to objective evidence of their progress in the classes. Such correspondence would seem to indicate that students do perceive the course in the same way the intra-class measures indicate they should perceive them.

The overall pattern of the findings supported the postulate that proportion of attrition in non-credit, non-tuition reading classes can be considered a criterion for evaluating the general effectiveness and quality of the program. Since attrition was not found to be associated with the personality or motivational characteristics studied, it might be inferred that the course was not lacking in flexibility. On the other hand, the association of attrition with variables reflecting the functioning of the classes does indicate that attrition is, to some extent, a function of the lack of general effectiveness of the course. Student opinion of the course did not significantly correspond to the measures of improvement in the course, and this study did not provide evidence that such opinions alone constitute either a sufficient or an equivalent criterion for evaluation. Student opinion, however, did tend to conform to the pattern of objective findings.

This exploratory study seems to suggest a direction which further research evaluating the service-type reading program should take. That is, intra-class variables need further control and manipulation to observe their effect on attrition. The effect of course improvement may then be observed in reduction of attrition, since a large dropout rate suggests an ineffective program.

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The SRA Reading Laboratory and Fourth Grade Pupils

REGINALD L. JONES and EARL L. VAN WHY

THE SRA READING LABORATORY is a set of multilevel reading materials designed to provide for a wide range of reading abilities within a single classroom. In using the materials, each pupil begins at the point representative of his present level of functioning and proceeds through the units at his own pace. The exercises are largely of a self-teaching nature with demands on the teacher being minimal. Four editions (elementary, intermediate, secondary, and college prep) have been developed.

This Laboratory, composed of two basic sections, presents materials which emphasize the acquisition of word meaning and word analysis skills, and the "basic reading-thinking skills." Comprehension checks on oral and written material are provided.

Although the materials have been in existence for several years (since 1958), there appears to be little published on their effectiveness. A survey of the literature revealed no studies using the Laboratory. The experimental background of the SRA Reading Laboratory has been stated by the authors as follows:

> The SRA Reading Laboratory grew out of six years of preliminary work by the author in Florida, North Carolina, and Westchester County, New York. During this time several thousand students were trained with multilevel materials. In a carefully controlled experiment involving 456 seventh grade students in Charlotte, North Carolina, the group using multilevel materials showed a 112% greater gain than a matched group using one-level materials. Experiments with 4th, 5th and 6th grade students during the past three years show similar gains.[1]

Against this background, the following specific hypotheses have been tested:

Reginald L. Jones is research associate of the Institutional Research Service of Miami University, Oxford, Ohio; and Earl L. Van Why is a teacher in the public schools at Lebanon, Ohio.

1. There are no significant differences in the post-experimental performance on the Vocabulary Subtest of the Iowa Tests of Basic Skills for an unselected group of fourth grade pupils who have been trained with the SRA Reading Laboratory (experimental group) and those pupils who have received no such training (control group).

2. There are no significant differences in post-experimental performance on the Reading Comprehension Subtest of the Iowa Test of Basic Skills of a group of fourth grade pupils who received training with the SRA Reading Laboratory and those pupils who received no such training.

3. There are no significant differences in the pre- to post-experimental changes in vocabulary of pupils in either the experimental or the control group.

4. No significant differences will be found in the pre-to-post change in the reading comprehension scores of either experimental or control subjects.

5. There are no significant differences in the vocabulary changes for pupils in either the experimental or the control group who function at various pre-achievement levels (here labelled low, middle, and high).

6. There are no significant differences in the reading comprehension changes for experimental and control subjects who function at various pre-experimental achievement levels.

7. Fourth grade pupils who achieve in the lower third of their class in vocabulary and who receive training with the SRA Reading Laboratory will perform no higher on a post-training measure of vocabulary than will those fourth grade pupils who receive no training with the SRA Reading Laboratory.

8. Experimental subjects who achieve in the middle third of their class on a measure of vocabulary will perform no better than the control group on a post-training measure of vocabulary.

9. Fourth grade pupils who achieve in the upper third of their class on a measure of vocabulary and who receive training with the SRA Laboratory will perform no better than the control group on a post-training measure of vocabulary.

10. Fourth grade pupils who achieve in the lower third of their class in reading comprehension and who receive training

with the SRA Reading Laboratory will perform no higher on a post-training measure of reading comprehension than will those fourth grade pupils who receive no training with the SRA Reading Laboratory.

11. Experimental subjects who achieve in the middle third of their class on a measure of reading comprehension will perform no better than the control group on a post-training measure of reading comprehension.

12. Fourth grade pupils who achieve in the upper third of their class on a measure of reading comprehension and who receive training with the SRA Laboratory will perform no better than the control group on a post-training measure of reading comprehension.

Subjects

The subjects of this experiment were four sections of fourth grade classes. Two of these classes were set aside as control ubjects, while two groups received training with the SRA Reading Laboratory (experimental). Both experimental and control classes were matched for average level of ability. One hundred and four of the 119 available subjects were used in the analysis reported herein, with pupils who were absent when the pretest or post-test was administered being eilminated from the samples. Eight students were eliminated to effect adequate ability matching.

Procedures

Experimental classes received training with the SRA Reading Laboratory extending over a period of five months beginning in January and ending in June. The procedures outlined in the manual were followed very closely. Experimental and control classes were administered a reading test before the experiment began and again at its close. The data yielded by the reading tests provided the measures for assessing the effectiveness of the SRA Reading Laboratory.

All pupils had been administered the Lorge-Thorndike Tests of Intelligence earlier in the year. The scores on this test were used to equate the experimental and control groups for level of ability.

Reading Test

The Vocabulary and Reading Comprehension Subtests of the Iowa Tests of Basic Skills[2] were used as criterion measures. The two subtests were found to possess satifactory face and concurrent validity. Split half reliabilities of .86 and .96 were reported for the Vocabulary and Reading Comprehension Subtests, respectively.

Results

Matching

The results of matching experimental and control groups for I.Q. are presented in Table I. Both groups were found to be closely matched for level as well as range of intellectual functioning.

The pre-experimental standing of experimental and control groups on the Vocabulary and Reading Comprehension Subtests is presented in Table II. These results show that both groups were closely matched on these subtests. Differences in post-experimental measures of vocabulary and reading comprehension, then, must be attributed either to training with the SRA Reading Laboratory or to the absence of such training.

Post-test Standing of Experimental and Control Groups

Inspection of the post-test measures presented in Table III shows that there are no significant differences between the experimental and control groups on the Vocabulary and Reading Comprehension Subtests of the Iowa Tests of Basic Skills. Consequently, hypotheses 1 and 2 are accepted.

Hypotheses 3 and 4 have stated that differences from pre-test to post-test will be greater for the experimental group. Such a difference can occur in spite of the fact that the groups were equated on a pre-test measure of vocabulary and reading comprehension and were not significantly different on a post-experimental measure on these variables. Results bearing on hypotheses 3 and 4 are reported in Table IV. The change from pre-tests to post-tests for both groups was significant at less than .001. However, differences in the values of the individual "t" ratios suggest that the null hypotheses could be rejected at a more stringent level for the experimental subjects.

TABLE I

Means, Standard Deviations, and "t" Ratios of Differences Between the Mean I.Q.'s of Experimental and Control Groups

Group	N	Mean I.Q.	S.D.	Dm	"t"	P
Control	52	101.70	13.31	2.01	.78	NS*
Experimental	52	103.71	12.57			

* Unless otherwise indicated, $P \leqslant .05$ is adopted as a critical level.

TABLE II

Number of Subjects, Means, Standard Deviations, and "t" Ratios of the Differences Between Pre-Test Standing of Experimental and Control Groups on the Vocabulary and Reading Comprehension Subtests of the Iowa Tests of Basic Skills

Group	Subtest	N	Mean	S.D.	Dm	"t"	P*
Control	Vocabulary	52	4.33	.77	.14	.82	NS
Experimental	Vocabulary	52	4.36	.91			
Control	Reading Comprehension	52	4.11	.80	.08	.40	NS
Experimental	Reading Comprehension	52	4.19	1.30			

* $P > .25$ adopted as a critical level.

TABLE III

Number of Subjects, Means, Standard Deviations, "t" Ratios, and Level of Significance of the Post-Test Standing of Control and Experimental Groups on the Vocabulary and Reading Comprehension Subtests of the Iowa Tests of Basic Skills

Group	Subtest	N	Mean	S.D.	Dm	"t"	P
Control	Vocabulary	52	5.16	.66			
					.11	.55	NS
Experimental	Vocabulary	52	5.27	1.25			
Control	Reading Comprehension	52	4.84	1.12			
					.16	.62	NS
Experimental	Reading Comprehension	52	5.00	1.59			

TABLE IV

"t" Ratios of the Level of Significance of Pre-to-Post Change on the Vocabulary and Reading Comprehension Subtests of the Iowa Tests of Reading Skills

Group	Subtest	N	Pre-Test Mean	Post-Test Mean	Dm	SE_{md}	"t"	P
Control	Vocabulary	52	4.33	5.16	.83	.122	6.80	<.001
Experimental	Vocabulary	52	4.36	5.27	.91	.094	9.68	<.001
Control	Reading Comprehension	52	4.11	4.84	.73	.105	6.95	<.001
Experimental	Reading Comprehension	52	4.19	5.00	.89	.111	8.09	<.001

Effects on Fourth Grade Pupils Functioning at the Low, Middle, and High Achievement Levels

Two general questions were raised in this section. First, do pupils of either control or experimental groups benefit from training with the SRA Reading Laboratory or the absence of such training? Second, are there differences in the post-experimental performance *between* control and experimental groups of several achievement levels? (Hypotheses 7-12).

Preparation of Scores for Analysis.—The following procedures were used in preparing this phase of the data:

First, the differences between the standard scores obtained on the first and second test were computed, making certain that the sign of the difference was preserved in each instance. Secondly, all scores of a given individual (i.e., pre-test and post-test score along with the difference between scores) and within a given experimental condition (i.e., experimental or control group by grade level) were ordered sequentially on the basis of the size of the pre-test score. The experimental and control group distributions were then inspected jointly for points which would delineate three groups (here labelled low, middle, and high) which were roughly equal in size and representative of disparate but roughly equidistant points. Thus, these data yielded experimental and control groups which had three subgroups each and were about equal in achievement on pre-experimental measures of vocabulary and reading comprehension. These results permitted evaluation of the magnitude of change within a given experimental condition as well as between experimental conditions. The data were then subjected to the Kruskal Walis Analysis of Variance by Ranks (Question 1) and the Mann-Whitney U Test (Question 2).[3]

Results relating to Question 1 are presented in Table V. Inspection of these data shows that there were significant pre-to-post changes for pupils who functioned at the three achievement levels. However, these differences occurred only with pupils who had been trained with the SRA Reading Laboratory. High achievers were found to make the greatest gain in vocabulary. The low achievers were second in magnitude of

TABLE V

Significance Tests of the Degree of Pre-Test to Post-Test Change for Low, Middle and High Achievers Within the Experimental and Control Groups

Subtest	Group	Level	N	Average Pre-Test Standing	Average of Ranked Change Scores	H	P
Vocabulary	Control	Low	19	3.48	25.68		
		Middle	19	4.31	24.61	1.57	NS
		High	14	5.17	29.46		
Vocabulary	Experimental	Low	18	3.39	26.94		
		Middle	15	4.34	18.53	7.70	<.05
		High	19	5.30	32.52		
Reading Comprehension	Control	Low	19	3.23	27.89		
		Middle	16	4.13	27.72	.15	NS
		High	17	5.06	24.04		
Reading Comprehension	Experimental	Low	19	3.47	28.89		
		Middle	12	3.96	27.72	8.82	<.05
		High	21	5.19	24.04		

TABLE VI

Significance Tests of the Difference Between Experimental and Control Group Subjects Having a Pre-Experimental Status of Low, Middle, and High on the Vocabulary and Reading Comprehension Subtests of the Iowa Tests of Basic Skills

Subtest	Pre-Experimental Achievement Level	Group	N	Average of Ranked Change Scores	U	P
Vocabulary	Low	Control	19	18.79		
		Experi.	18	18.94	159.5	NS
	Middle	Control	19	17.42		
		Experi.	15	15.50	113.5	NS
	High	Control	14	16.07		
		Experi.	19	17.68	120.0	NS
Reading Comprehension	Low	Control	19	19.13		
		Experi.	19	19.76	173.5	NS
	Middle	Control	16	12.97		
		Experi.	12	15.27	74.0	NS
	High	Control	17	19.79		
		Experi.	21	19.29	$z^* = .15$	NS

* z is used when any value of N_s exceeds 20.

gain, while the middle achievers received the least benefit. This pattern did not occur in reading comprehension, however. The low achievers were found to receive the greatest benefit from training with the SRA Reading Laboratory, followed by the middle achievers. High achievers on a pre-experimental measure of reading comprehension benefited least. No significant differences within levels were found for control group participants.

Hypotheses 7-12 raised the question of whether pupils functioning at various achievement levels would benefit from training with the SRA Reading Laboratory more than would pupils not trained with these materials. It was expected that the post-experimental performance of experimental pupils of all achievement levels would be significantly greater than that obtained by pupils who were not trained with the SRA Reading Laboratory. Data bearing on these hypotheses are presented in Table VI. The results do not permit rejection of the null hypotheses. It is concluded that pupils of low, middle, or high achievement will perform no higher on a post-training measure of vocabulary and reading comprehension than will those pupils who received no such training. However, training with the Laboratory did affect, differentially, those who received such training. High achievers made the greatest pre-test to post-test gains in vocabulary, while low achievers made significant gains in reading comprehension.

Summary

One hundred four pupils in the fouth grade were used as subjects in an experiment investigating the effect of training with SRA Reading Laboratory on vocabulary and reading comprehension as measured by the Iowa Tests of Basic Skills. Fifty-two pupils received training with the Reading Laboratory while a matched group of fifty-two pupils received no such training. The following results are noted:

1. No significant differences between experimental and control groups on post-experimental measures of vocabulary or reading comprehension were found.

2. Both control and experimental pupils made significant pre-test to post-test changes.

3. Training with the SRA Reading Laboratory resulted in significant within-group differences in the pre-to-post change scores of pupils at different achievement levels. High achievers made the greatest gains in vocabulary followed by low and middle achievers, respectively. Low achievers made the greatest gains in reading comprehension followed by the middle and high achievers, in that order. There were no significant differences in the pre-test to post-test performance of control group pupils of various achievement levels.

4. Experimental pupils of the three achievement levels made no greater post-training vocabulary and reading comprehension gains than did their matched controls.

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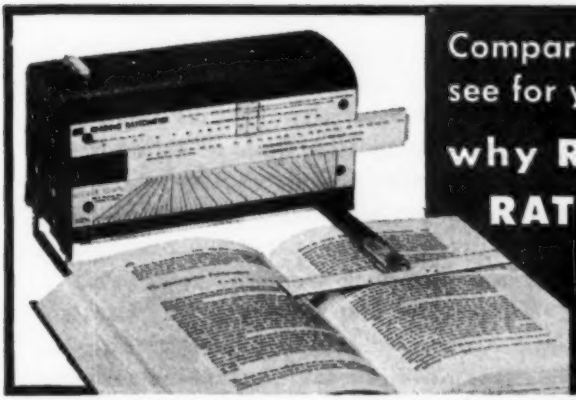

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Medicine for Reading Improvement

RALPH C. STAIGER

Among the many possible causes of reading difficulty, physical anomalies have long been recognized. Poor vision, impaired hearing, and low physical vitality are checked by most clinicians who are attempting to analyze a reading disability. Additional relationships between physical status and reading are being reported frequently.

Clinicians with backgrounds in psychology and education are loathe to investigate this area because of the medical aspects of such studies. It is for this reason that the experiment described here is of interest. It was the result of a cooperative effort which involved participants from three disciplines: education, psychology, and medicine.[1] In addition, the friendly cooperation of many children, college students, their parents, their physicians, and the school authorities was obtained for an experiment somewhat unusual outside institutional circles.

There is little doubt that reading is an intellectual task, dependent upon the activities of the human brain. Would a drug believed to influence neural activity have a beneficial effect on the reading of retarded readers? Would their speed and accuracy of perception be influenced? These were the problems faced by the investigating team.

Smith and Carrigan[2] have suggested that the acetylcholine-cholines-terase balance in the neural system is related to certain types of reading disability. A medicine which is believed to be a precursor of acetylcholine and which would affect this balance was used in this study. The drug used was one of a group known as "psychic energizers." It was not a stimulant of the "pep pill" variety, nor was it a barbiturate. Essentially an amino acid, its trade name is "deanol," and it is the p-acetamidobenyoic acid sale of 2-dimethylaminoethanol. It was considered a very safe drug, for no effects were noticed in the many investigations which preceded the present one. Three

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of these were separate studies in each of which deanol was found to be positively related to the learning ability of disturbed and retarded children.[3] In two, reading in particular was reported to have been improved. None of these studies utilized satisfactory controls, however, and so this controlled study of the effects of deanol in retarded readers in regular school situations was undertaken.

Sixty pairs of retarded readers participated, matched for age, reading test score, and intelligence level. Twenty-five pairs were in the fourth and fifth grades, thirteen pairs were in junior high school, and twenty-two pairs were college sophomores. The pupils were enrolled in the Hattiesburg schools, and the students were from psychology classes in Mississippi Southern College. A detailed account of the procedures followed can be found in an earlier presentation.[4]

Reading retardation and reading gain were measured by the Gates Reading Survey. Subtest scores of reading vocabulary, reading speed and accuracy, and reading comprehension were obtained. In addition a measure of perceptual speed was obtained by using the Clerical Speed and Accuracy subtest of the Differential Aptitude Test battery.

The clerical test directions were altered to make them understandable to the pupils involved, for they were originally designed for adult use. This did not present a problem, for only raw scores were used in computing differences between premedication and postmedication results, and so the norms were not utilized. The children did not appear to have any difficulty with the test.

The subjects were classified as slightly retarded and considerably retarded readers on the basis of the total reading test scores. Intelligence levels were obtained from the school or college permanent record, and persons below average in intelligence were not included in the study.

The deanol used was administered under the supervision of the family physician in two 75-milligram doses per day for eight weeks, with the parents of school-age children accepting the responsibility for administration, and the college clinic providing dosage for college students. Since deanol is a drug with long-lasting effects, an occasional lapse of dosage did not

influence the study. Most subjects were reported by parents and college nurse to have been faithful in taking their medicine.

Test scores before and after medication were compared by an analysis of variance technique. No significant differences in reading performance between the deanol and the placebo groups were noted in any category of students—elementary, high school, or college, slightly retarded, and considerably retarded. The reading subtest scores suggested a tendency, however, which might be worthy of attention in light of the clerical speed and accuracy test findings. In the clerical speed and accuracy analysis, the only source of variation which was statistically significant was that between the deanol-treated and placebo-treated groups with no other relationship apparent. In all but one instance the difference favored the experimental group.

Although the reading subtest analysis showed no variances which were statistically significant, the F values became greater when the skill being measured could be considered relevant to perceptual speed and accuracy. The vocabulary subtest had an F value of .06, the level of comprehension subtest. 17, and the speed of reading .245. A tendency appears to be present, although not statistically significant at the usually accepted levels. It might be mentioned that many of the parents of the children taking deanol reported a new alertness on the part of their children.

It appears from the foregoing that the following conclusions can be drawn, limited, of course, by the conditions of the study: The medicine used to stimulate neural activity apparently had an effect, as indicated by the results of the test of perceptual speed. At all three age levels and in all but one category of retardation, clerical speed and accuracy was improved beyond chance differences for those subjects who were administered deanol.

The complex intellectual activity which is reading, however, was not influenced to any great extent by the medicine. As the reading task tended to involve perceptual speed and accuracy, the deanol appeared to have somewhat greater influence on test scores.

These findings seem altogether proper, when examined in the light of our current knowledge of the reading act, which is part perception, part memory, and part analysis of relationships. It is possible that further research will enable clinicians to isolate for treatment by medicines like deanol those persons who will profit from increased neural activity of the sort deanol produces. At present, we can only guess whether the medicine will have any influence. Perhaps further work on the hypothesis of Smith and Carrigan will produce more concrete information.

There is little doubt that interdisciplinary research such as that reported here is stimulating to the participants and results in worthwhile relationships among research workers of different interests and backgrounds. This has been one of the rewarding results of the present study. Another by-product almost too obvious to mention is the cooperative spirit which the research team discovered in the community while conducting the study. The local medical society, individual physicians, the school superintendent, principals, teachers, college administration, parents and subjects should be considered as a part of the research team which conducted this investigation, for without their active support the study could not have been brought to completion.

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Reviews

A TEACHER'S GUIDE TO CHILDREN'S BOOKS, by Nancy Larrick, Columbus, Ohio: Charles E. Merrill Books, Inc., 1960, 316 pp.

Already *A Teacher's Guide to Children's Books* is being cordially welcomed. After experience in using Dr. Larrick's *A Parent's Guide to Children's Reading* (1958), it is no surprise to find a highly readable and attractive book in *A Teacher's Guide.*

The author's point of view is expressed in these words from her introduction: "The extent to which children find joy in good books depends largely on you, the teacher. If you associate reading chiefly with test scores and getting on to the questions after a story, reading may seem like a chore, not a pleasure. If reading a book means writing a required book report, it may seem advisable to a child to read less. And if there is never time to read at a leisurely pace or talk about books for the satisfaction they give, then reading and books can hardly seem important.

"Oddly enough, our zeal to see children get ahead often generates a businesslike attitude that means pressure, not pleasure, in reading."

The book is divided into four parts. "Day in and Day Out from Grade to Grade" describes the characteristic interests of children from Grade One through Grade Six and favorite books which appeal to these interests. Books for reading *to* children as well as books they can read independently are suggested. Dr. Larrick points out the increased interest of today's children—even the very young—in books of information. She notes that they want their information "straight," without the sugar-coating of a story. "Children relish such exact terms as *satellite, electronics,* and *category.* They may chuckle over the rhyming nonsense of Chicken Licken, but they like to use technical terms when speaking of technical things." Perhaps television has much to do with this attitude even among very young children. The author has kind words for what she calls "the fabulous motivation that television offers."

A child acquires real independence in reading during the middle grades. These are the "golden years"—if a child discovers at this time the joy of reading, he probably will always keep it. Good readers often devour two hundred or more books a year when they are in grades five and six. They eagerly read the "series" books, such as the Landmark and the Real Books, perhaps because they feel "safe" with a book they know is like others they have enjoyed, perhaps because children at this age are inveterate collectors. To acquire a new Landmark Book has some of the same excitement as receiving a new coin, or stamp, or autograph.

Part Two, "Bringing Children and Books Together," suggests many ways for a teacher to arouse enthusiasm for reading. Individual hobbies, class projects, the use of books to shed light on the personal problems of individual children, listening to poems, using books to enrich units in social studies and science, encouraging creative responses to reading through art, writing, and dramatics—these are among the suggestions offered. Each suggestion is supported with names of books or poems especially appropriate to the activity involved. Throughout, the importance of good oral reading by the teacher *to* the children is stressed.

Part Three is called "Taking Stock of Your Reading Program." It discusses the need for many and varied books: "Ten books per pupil is

considered the minimum needed in an elementary school library today." There is a rather unusual chapter explaining how a book is made. The information offered about various printing methods and about the way in which author, artist, designer, and editor work together to make a beautiful book provides the means for a teacher to help children appreciate and respect books more deeply. The book goes on to say, however: "The text of a children's book makes it or breaks it . . ." A story must have strong plot and characters who are real individuals. If it is a book of fact, it must have accuracy, clarity, and strong organization. "A scrapbook of unrelated pieces" has little holding power. "Style" in a children's book is hard to define. Literary style, as an adult views it, may not appeal to children at all. "A number of children's books, awarded top honors by adults, spend most of their days on library shelves." After all, *what* the book says, more than *how* it is said, is the touchstone. This section ends with a well-chosen list of book lists which she believes teachers should have at hand to locate books of greatest appeal to their children.

In Part Four, Dr. Larrick supplies her own list of "Favorite Books for Boys and Girls" and also of "Further Reading for Teachers." The list for children (approximately six hundred entries, some of which refer to more than one book) is alphabetically arranged by title and coded for primary-grade level, middle-grade level, and junior high level. Authors and publishers are named. Each title is briefly annotated.

The book is very well indexed.

A Teacher's Guide to Children's Books is a "popular" volume in the best sense of this abused word. Its style is easy and informal; it is illustrated with many reproductions from children's books. It is practical. It does *not* provide any extended excerpts from children's literature; it does *not* attempt any history of this literature or extensive comment on individual books.

For whom is it most useful? In the reviewer's opinion, each elementary school should have a copy in its collection of books for teacher reference. Its appeal is mainly to the classroom teacher. It should also be required reading in basic methods courses in elementary school reading. Too often such courses are devoted almost exclusively to ways of developing reading skills. We need to remember that there are two kinds of non-readers: those who can't, and those who don't. We would have fewer of the second type if more teachers knew more about more children's books.

Nancy Larrick, classroom teacher, teacher of teachers, past president of the International Reading Association, editor of children's books, is eminently well qualified to write this practical and interesting book.

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DEVELOPMENTAL READING IN THE CONTENT AREAS: Report of Proceedings, 1960 Spring Conference, Chicago Area Reading Association of the International Reading Association. 52 pp.

The Chicago Area Reading Association is a regional council of the International Reading Association. Originally a local council, it was rechartered a regional council in the Spring of 1960. This book, according to Dr. Carl Lefevre, President of the Chicago Area Reading Association, marks two firsts: It reflects the inaugural of the Chicago Reading Association as a regional council and it marks the first attempt by this organization, since its inception as a local council, to publish the proceedings of its annual spring conference.

The table of contents and format are typical of publications of this sort: There is the usual note from the president; the lists of officers, committee membership, and conference participants; a welcome by one from the upper echelon; and the keynote speeches.

The book has five major parts: Mathematics and Science; Social Studies; Literature for Children; Literature for Youth; and Audio-Visual aids and the Mass Media in the Content fields.

The first major speech, by Dr. Paul Witty, is a general treatment of the theme of the conference, *Developmental Reading in the Content Fields.* He deals with the characteristics of a sound reading program, a few interesting statistics about reading achievement among children and adults, some criticisms of reading instruction, the objectives of a developmental reading program, and reading in the content areas. For illustrative purposes he chooses the social studies.

The second major speech, *And Now The Story-Teller Comes,* by William I. Martin, Jr., is a concise expressive plea for a return to the art of storytelling.

There are three papers dealing with reading in mathematics and science, five with reading in the social studies, four with literature for children, four with literature for youth, and five with audio-visual aids and mass media.

Excluding the address by Dr. Witty, none of the papers are more than three pages in length. A few have no more than five or six paragraphs.

In the aggregate the papers can hardly be accused of pragmatism. The exceptions are the three papers dealing with reading in science and mathematics, and an account in the Literature for Youth section entitled "Winning the Reluctant Reader in High School."

The papers, in general, review the problems readers encounter in the various subject matter areas. There is some overlapping among those dealing with the social studies. Except for the four specified in the previous paragraph, none of the papers give more than passing suggestions on what may be done to correct the problems discussed by the participants.

Maybe it was the purpose of the conference to emphasize problems. This reviewer would have felt less disappointment if solutions had received equal emphasis.

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REVIEWS

David L. Shepherd. EFFECTIVE READING IN SCIENCE. EFFECTIVE READING IN SOCIAL STUDIES. Evanston, Illinois: Row, Peterson, 1960. 128 and 157 pp.

Whatever the practice in individual secondary schools, probably more and more administrators and teachers realize that reading must be an all-school program and not the exclusive province of the English or remedial reading teacher. However, beyond some general books on improving reading, teachers of specific subject fields have had little guidance or help.

David Shepherd's two handbooks are designed for such teachers and for those in charge of in-service training programs.

Mr. Shepherd's books are clearly not for experts, but for those who have little or no knowledge of teaching reading. He does not suggest that reading in science or in social studies is different from reading in general. Instead, he has selected certain basic techniques which would be useful in the subjects covered and has offered practical ways in which they may be taught.

Each book begins with a general chapter on the material to be covered. This is followed by chapters on the evaluation of reading skills and diagnosis of difficulties, on such techniques as finding information, using parts of books, reading for main ideas, building vocabulary, analyzing what is read. The social studies book contains special information on propaganda, while the science book stresses certain specialized materials like the reading of formulae and symbols.

Included in each chapter are sample dialogues showing possible approaches to the particular problem.

On the whole, if the programs outlined in these books were carried out, especially in the first year of the secondary school, many students of above average or of average ability would certainly become more effective readers of factual matter. Such programs, on the other hand, would be less useful for treating the slow learner or the remedial case.

If our schools had really effective developmental reading programs through the elementary and junior high years, subject matter teachers would not have to attempt to reinforce or even teach reading skills. But so few systems seem to approach this ideal that part of the burden must fall on them. These books are a valuable contribution to what will probably be a growing movement to have every teacher a language teacher.

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HELPING CHILDREN REACH THEIR POTENTIAL, by Gladys Gardner Jenkins. New York: Scott Foresman & Co., 200 pp.

This manual is called a teacher's resource book. It may be a book which young teachers will read eagerly; but, in my judgment, it is not a manual for the perceptive, experienced, and successful teacher.

I make this claim that it is not for the mature teacher for two importan reasons: one, the book is full of platitudes and of "elaboration of the obvious;" two, it seems to be based on the premise that only the emo-

tionally adjusted, happy, secure child can learn. Of course, it is desirable for all people to be happy, well-adjusted and secure, if possible. Yet much is attributed to "emotional blocks" in children as a cause of non-learning, which may be dispelled by a knowledge of just *why* the child doesn't learn and then adjusting methods of instruction to his needs. We need only look at the world scene to know that in seeming maturity, some men are not emotionally well-adjusted. One critic, Archibald MacLeish, wrote of Ernest Hemingway, after his suicide, "He never achieved emotional maturity." Yet Hemingway's books stand as a monument to his hard work and constant growth as a stylist.

But to return to the manual. It explores "the dynamics of growth and behavior" to the exclusion of methods and materials of instruction. And it closes on this note: "if we bring to the classroom . . . an interest that draws us ever deeper into the process of trying to understand the dynamics of human growth and behavior—teaching can be one of the most satisfying and rewarding experiences of our lives."

As to my first claim, I quote from page 160 where the discussion is about "Inherited Characteristics" and runs like this: "Some newborn babies from birth are more active and alert than others. Some newborn babies appear more placid than others. Later the active babies seem to kick and wriggle with excitement when they are played with or offered a toy, while the less active children may do just the opposite, looking at the proffered toy with a still, absorbed attention."

The title of the manual intrigued me and I was eager to explore it, thinking that it would throw some new light on methods of instruction aimed to awaken all types of minds. To me, "the school is entry into the life of the mind," and I was astonished that this book was *not* going to deal with instruction. It does not except in what I would call a most general and oblique way.

Chapter One discusses "Acceptance as a Framework for Learning" and is broken down into such subtopics as Knowing First Names, Finding Friendly Personal Things to Say, Avoiding Favoritism, and so on. Chapter Two discusses "Achievement for Every Child" and begins with "achievement depends on the child's image of himself" and the salient point (page 35) is that "we must test our methods of teaching, our approach to the children in our classroom, by asking ourselves whether we are helping each child gain confidence and self-respect so that he is *able to learn.*"

Then there is a story of nineteen-year-old Phil who felt himself a failure but nobody helped Phil until an intelligent Miss Phelps came on the scene and had Phil tested. It was found that he had superior intellectual ability as checked by both Stanford-Binet and Wechsler intelligence tests, and also it was discovered that he was a retarded reader. Of course, then, he was rehabilitated and his self-confidence established. But *why*, the reader asks, was not the testing to determine Phil's capacity used long before he became nineteen. And why does it not establish the wisdom of testing as a method of getting acquainted with any students who are in difficulty?

Then follows a discussion of intelligence testing with pros and cons—all its limitations and weaknesses—until finally, it is not put in a light helpful to classroom teachers (see conclusion on page 40).

On page 52 is a story of Nils, a junior in high school. He is a boy with an I.Q. of 150, but he has had only two grades above C since eighth grade. Nils is literally staging a sit-down strike in school. He is pleasant, but he does *not* produce, even when he promises to do so. His family wants him to be a lawyer; he says he wants to be an architect.

The problem of Nils (like so many other problems in the book) is not resolved. It is left on this statement! "Perhaps when he gets away from home and starts working on the things where his real interests lie, he may become motivated to use his capabilities and make some very worth-while contributions to our society."

Ironically, this story is followed by a discussion of motivating children to want to learn. For me, it holds no key as to what might have been done with and for Nils.

There is also a story of Simon, a restless, nervous boy with a short attention span. His troubles were called emotional. When tested, he proved to have an I.Q. of 101. In Simon's story are two sentences with clues for me. They are "He can tell me orally how to solve problems," and "Spelling deficiencies make it difficult for him to put anything down on paper." Simon was left going into junior high school with these questions raised: "How will he get along? How can he be helped? How will he react when he reaches junior high school? What is ahead for Simon?"

Perhaps the stories of accelerated students on pages 64, 65, and 67, offset some of my criticisms, but note that there is delay usually in arriving at a realization of the students' superior capacities.

The manual has seven chapters, and each is preceded by two illustrated pages with a list of questions which are answered in the chapter. One technique of reading I suggest, is to read the questions and look up the answers to those which seem new and intriguing. I doubt that a mature teacher will look up the answer to "What can I do if I simply cannot learn to like a particular child?"

Chapter VII, the final chapter, considers "Home and Family." Here are some of the questions: How important is personal contact between home and school? Why don't parents look at their children's faults objectively? What is a good home anyway? Is it possible for parent and child to have irreconcilable personalities? Are families less close than they used to be?

It is not the province of a reviewer to set up a program in place of the one offered in the book. It is the reviewer's task to indicate what the book has to offer its readers. Teachers are not social workers nor marriage counselors nor amateur psychiatrists. Next September when they welcome a new class of twenty-eight boys and girls, they will not go far wrong if they challenge the minds of the pupils, stimulate their curiosity and imagination, and present them with programs of study which will mean progress. Home and school gravitate into a friendly relationship when Johnny and Mary are excited about learning.

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News, Letters, and Notes

Readers of the JOURNAL OF DEVELOPMENTAL READING will be pleased to learn that the JOURNAL is now regularly indexed in the following publications:

Education Index
Mental Health Index
Psychological Abstracts

This recognition of the quality of our contributors' efforts is most gratifying and reflects the growing concern for the publication of research and progress reports in the whole area of reading improvement.

Fort Worth: National Reading Conference

The eleventh annual meeting of the National Reading Conference will take place December 7-9 at Texas Christian University, Fort Worth, Texas. Papers on aspects of special interests in teaching reading in college and adult situations will be presented by experts in these areas; reports on recent research projects, panel presentations, and group discussions will also be part of the program. Among those speaking will be Jack Holmes, University of California; Albert Kingston, University of Georgia; Alton Raygor, University of Minnesota; and George Spache, University of Florida. Full details of the meeting may be secured from the program chairman, Arthur S. McDonald, Director of Reading Services, Marquette University, Milwaukee, Wisconsin, or from the Chairman of the Board of Directors, William Eller, University of Iowa, Iowa City, Iowa.

Philadelphia: Temple Reading Institute

Theme of the nineteenth Annual Reading Institute which is to be held January 22-26, 1962, at Temple University is "Reading in Modern Communication." Participants will include members of the Temple Reading Clinic staff, as well as Edgar Dale and John Ciardi. Special meetings are offered for teachers in elementary, high school, college, and adult programs; for reading and language arts teachers; administrators and supervisors; college and reading clinic directors; instructors and clinicians. Further details may be obtained from Bruce W. Brigham, Coordinator of Institute Services, The Reading Clinic, Temple University, Philadelphia 22, Pennsylvania.

Los Angeles: New Reading Association

Formation of a new reading association is announced for the Los Angeles area, to be known as the Reading Council of Los Angeles. The first general membership meeting will be held at Los Angeles High School on December 2, 1961, with Walter Lansu presiding. Those interested in furthering the growth and activities of this association may write to the Reading Council at 6140 W. Blackburn, Los Angeles 36, California.

NEWS, LETTERS, AND NOTES

Reviews of Current Publications

Editorial policy regarding the presentation of reviews of current books and monographs in the JOURNAL is to publish lively and informative analyses of all significant publications on matters of reading-improvement. Reviewers are permitted the widest latitude in setting forth their judgments. Sometimes the views and opinions of reviewers will differ markedly from conventional attitudes or even from the personal judgments of the editorial staff. But readers and authors of publications reviewed are expected to submit their own opinions, rebuttals, and comments, whenever a review seems insufficient, intemperate, or unrepresentative of studied judgment. At present, many of the reviews are solicited, but the review editor, A. A. DeVitis, welcomes new reviewers and urges readers to submit their judgments on significant publications.

TV and Teaching Reading

For the third time, a course in Efficient Reading is being offered on the Minnesota Industry's School of the Air, beginning October 6, 1961. Survey of programs offered in the autumn of 1960 indicated that this course, conducted by James I. Brown of the University of Minnesota staff, was very well received and brought forth more comments than any other program presented. This year the series will be put on tape which will be available to other stations later. An advanced course to follow the beginning training is now in the planning stage. Detailed information on this enterprise may be secured from James I. Brown, University of Minnesota, St. Paul 1, Minnesota.

Recent Publications

Among the periodical articles which have appeared within the past few months, several are worthy of serious consideration:

Allan M. Pitkanen, "Inadequate Readers in the Classroom," *Clearing House,* XXXV (May, 1961), 557-61, offers several suggestions for the classroom teacher to cope with inadequate readers or non-readers.

Frederic R. Walker, "Evaluation of Three Methods of Teaching Reading, Seventh Grade," *Journal of Educational Research,* LIV (May, 1961), 356-58, concludes that an individualized approach to reading-improvement proved most satisfactory.

Ralph R. Bentley and R. Edward Galloway, "A Comparison of the Readability of Vocational Agriculture Reference Books with the Reading Ability of the Students Reading Them," *Journal of Experimental Education,* XXIX (June, 1961), 373-83, points to some interesting conclusions regarding students in vocational agriculture and their reading problems.

In *Education,* LXXXI (May, 1961), 515-50, 554-56, the entire Feature Section is devoted to matters of reading; many of the articles concern problems relating to individualized instruction, but work-study skills and speeded reading are also considered.

Background Music: A Possible Aid in Teaching Adult Reading Improvement

Many persons in the United States today are becoming increasingly desirous of learning to read more efficiently. In business, the professions and in college, there is increasing pressure to read faster and assimilate more. As a result, there is a constant need for persons engaged in the teaching of adult reading to seek new ways of aiding those who want to learn to take better advantage of their reading time. Consequently, this writer experimentally introduced the playing of background music in several of his courses in adult reading improvement as a possible means of helping persons learn to read with greater effectiveness.

The theory behind this experiment was that many persons gravitating to an evening course in reading are often tired and tension-ridden as a result of the daily work stint. In addition, it is believed by many that persons who are tension-ridden often are unable to learn as effectively as they might if more relaxed. Considerable indication exists in published research that listening to certain types of music serves as a tension-reducing device for some people.

Hence, this writer attempted the playing of background music to the adult reading students, acting on the general notion that many of those in class might be so tension-ridden as to have learning interfered with, and that if these tensions might be reduced then the ability to learn might be heightened (for an interesting review of the therapeutic and industrial uses of music, see Soibelman;[1] for a perhaps more enthusiastic interpretation of music therapy, see Podolsky[2]). Because of the many variables operating, no effort was made to do a rigid statistical study. Rather, an investigation of a more "clinical" nature was attempted.

The method of carrying out the study was simple. At intervals during the class sessions (consisting generally of timed and paced readings, tachistoscopic work, etc.) a record player was turned on. The music played was subjectively evaluated by this writer as being "soothing." In short, the class was held in the usual way of many adult reading improvement classes, except for the introduction of the background music.

The results of the investigation can be evaluated only subjectively and "clinically." However, the following factors did seem important:

1. A substantial number of persons in the reading classes were convinced that the music *itself* actually taught them to read better. A typical comment was "Where can I buy some of those records you used *which taught me to read better?*" (the records used were standard Mantovani recordings, available at many music stores). The fact that this attitude about the music prevailed among some persons may have been an indication of the effects of tension-reduction on learning. Likely, however, the suggestibility of some students also was related to the attitude. But in this case, the dynamics behind the attitude are not so important as the fact that the individuals actually felt that they were being changed in a favorable direction. Those who feel they are changing often do.

2. The great majority of the students enjoyed having the music played during the class sessions. They did feel it relaxing, and indicated that it made the class periods more enjoyable. Those who expressed dislike for the music generally didn't like music in the first place, or felt it made them unduly sleepy.

All in all, the playing of the background music during the class sessions must be considered a success. The plus-factors far outweighed the minus-factors. If a scattered few disliked the music, this minority was overwhelmingly outnumbered by those who liked to listen to the background music. Although no objective measure was available to determine whether the music actually increased the ability of some persons to read more efficiently, it is this writer's subjective impression that it did with some individuals. And, if nothing more, it made the class sessions more pleasant for the majority of the students. In the opinion of this writer, there is no reason why learning should not be made enjoyable.

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References

[1] Doris Soibelman, *Therapeutic and Industrial Uses of Music* (New York: Columbia University Press, 1948).

[2] Edward Podolsky, *Music Therapy* (New York: Philosophical Library, 1954).

Slow-Starting Students: Whose Responsibility?

"Intellectual talent is . . . as precious . . . as baseball talent."

Admission policies at the University of Michigan provide the teaching faculty with a highly talented student population. A recent study by the Evaluation and Examinations Division, Bureau of Psychological Services, indicates an estimated intelligence quotient for entering freshmen of about 127. It's reasonable to think that restricting admission to the brightest students will reduce the proportion of learning problems. Curiously, the results may be quite otherwise.

Restricting admission to the brightest applicants results in a sharp curtailment of the range of intelligence. All of our students are bright. Thus, differences in achievement become less dependent upon differences in intelligence and more dependent upon other variables such as motivation, tension and, perhaps more important, learning skills.

Coaching Needed

Most of us assume that a student who is bright and who has done well in high school knows how to learn, i.e., how to use his intelligence when faced with an academic task. But many of our entering students are primitive in this respect. Like baseball's "bonus babies" their natural talents have marked them as different from their contemporaries. They've been picked off the academic sand lots and sent to compete against professional students without sufficient opportunity to learn the techniques

for succeeding. Unless such primitives are coached properly, they often fail. We can hardly afford to let these candidates fail without giving them handling equivalent to that received by the athlete.

Some of these primitives come from small schools where competition has been lacking. Success has come too easily to them. Others have marked time in school because of rebelliousness or because of an adolescent lack of interest in things academic. Still others are simply panic-prone, unable to handle the stresses of competition when such stress is applied suddenly. These latter commonly "clutch" on examinations, suffering from a brief attack of panic or stage-fright during which they are unable to think coherently.

Faculty Assists

The helping hand which these students require is usually given by the teaching faculty. A word of advice or encouragement, suggestions for supplementary readings, a brief tutorial period—any one of these may make the difference between success and failure for some students. Fortunately, their very brightness helps them to learn the academic ropes quickly. However, there are many who require more time than the faculty man can afford to give. Most of these respond to special short-term coaching and thereafter are as successful as their peers. Often they are much more successful than mine-run students since they have untapped intellectual resources.

The question of the university's responsibility for salvaging these potential successes is moot. Currently, the Division of Reading Improvement Services provides both individual and group instruction at the student's request. Despite the title of the service, primary emphasis is given to instruction in learning. The student masters a systematic procedure which facilitates selection of concepts and processes to be learned, mastery of the material and periodic review. One step in the learning technique concerns a choice among a variety of reading modes. Thus, the student is instructed in extensive and intensive reading methods so that he achieves a skill and flexibility in reading beyond that required in his earlier academic experience.

Preparation for Examinations

Instruction is given in preparing for and writing examinations and in special problem areas such as spelling, foreign language, vocabulary development and writing.

A discussion of techniques of diagnosis and instruction is inappropriate here. What is probably more important is the foundation of research on which the procedures are based. Students have been differentiated to some extent by the kinds of problems they demonstrate and techniques of a compensatory nature can be offered to them.

The work is carried on by teaching assistants who are graduate students in educational psychology. Thus, it is both a student service and an academic training unit, as well as a research installation.

Some 700 to 1000 students receive instruction annually. Efficiency of the service has been assessed by measuring its effect on grades on probationary status and on attrition. Compared with students' equivalent in ability and motivation, reading service clients are clearly more successful. The most marked difference is in attrition three years following instruction.

Whose responsibility is it to help these youngsters? Many people think that the high schools should be responsible. Some evidence relevant to this contention is available. The largest group who apply for the service are freshmen; *the second largest group are graduate students.* The need seems to be most apparent to the student when he makes the transition from one level of competition to the next. There is a tendency to develop a level of skill consonant with the demands which are made of us. The range of talent is so great in the high school relative to that in college that competition for the bright must be inadequate. The same thing is true for the difference in range between college and graduate school.

Some argue that the university has done its part by allowing the student to enter; thereafter, it's up to the student to succeed. This is certainly a defensible position. The primary counter-argument is the cost of academic failure to both the state and the individual. When one totals the costs of admissions procedure, placement testing, academic counseling, housing, record-keeping, and instruction, the financial investment by the institution appears to be substantial. The cost to a failing student is both financial and psychological, and can hardly be measured in any satisfactory way.

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Developmental Reading At Saint Francis College

In September, 1954, Saint Francis College, Fort Wayne, Indiana, introduced an all-freshman developmental reading course modeled on the Purdue program and based upon the assumption that anyone can learn to read better than he does. There is no need to make an issue of colleges offering courses in developmental reading. Notwithstanding the marvelous educational opportunities provided by modern mass media of communication, reading will probably remain the most important way of obtaining an education. Reading is even more important as a source of continued educational growth and personal leisure.

Organization

The Saint Francis College reading center is a fairly elaborate lay-out comprising one large room and two medium-sized rooms equipped with modern mechanical and non-mechanical aids: the Harvard University reading films and a Bell-Howell projector, two Controlled Readers and accessory filmstrips ranging in interests and difficulty from primary grades through college, the SRA laboratories and accessories, a comprehensive SVE filmstrip library, three Keystone tachistoscopes for remedial reading, the Dolch reading aids, recorders, record players and reading records, and a comprehensive library of tests, books and magaiznes. While it is true that the center has a fine selection of books, students are encouraged to bring any books they wish to read. The department of English cooperates with the teachers of reading in compiling up-to-date reading lists.

The main features of the course are brief motivating talks on reading improvement based upon Baker's *Basic Reading Skills,* timed essay readings, reading films followed by comprehension checks, and reading with

the aid of Shadowscopes. The timed essays are selections of general interest taken from Cosper and Griffin, *Toward Better Reading Skill.*

Objectives of the Course

The objectives of the course are to improve general reading proficiency, to increase speed of comprehension, and to achieve flexibility of reading rate.

For our insistence on the improvement of reading rate, we do not apologize. Some teachers and students rationalize wrongly that slow reading is a cure for poor understanding. Research has shown, and this is confirmed by our observation, that the improvement of reading rate may indeed become a means for increasing comprehension. Developing his reading rate and comprehension is a student's own responsibility. The reading periods are characterized by an atmosphere of quiet, earnest study and self-imposed personal discipline. Success in the course requires the student's full cooperation. It is possible for him to go through the exercises with little profit to himself just as he may do in any other course. However, there have been very few instances of such behavior. The teacher of developmental reading needs to recall each day that every student must be challenged.

Procedure

In a three-to-five minute talk at the beginning of each lesson a particular reading skill or reading technique is explained. Frequently the substance of this brief talk is related to the type of essay or film studied that day or to reading techniques used with the shadowscopes. Without exception the talk is a "vigorous warming-up exercise," always motivating in character. We prepare diligently for this novel beginning of every lesson and do not allow it to deteriorate into dragging, time-consuming verbal behavior. A carefully constructed test administered at mid-semester and at the end of the semester inquires into the mastery and retention by students of reading skills explained in these "pep talks."

The second feature of a regular lesson is the timed reading of a selection from Cosper and Griffin, *Toward Better Reading Skill* or the study of a Harvard Reading Film. Occasionally, the comprehension test following the essay or the film is used as a teaching exercise for the development of such skills as critical thinking, selecting main ideas, detecting the purpose of the author, and forming generalizations which are helpful in integrative learning.

Approximately twenty-five minutes in each of two weekly periods are devoted to reading with the shadowscope. Some students read as many as fifteen books, good books too, such as works by Dickens, Hawthorne, Sinclair Lewis, Mark Twain, Tolstoy, Doestoevski, and contemporary popular writers. Each student is required to read at least eight books during the sixteen-week course.

Progress sheets are kept by students from day to day for all work done. Each student's record sheet is checked frequently and discussed with him. He learns to understand his present reading pattern and his potentiality for further improvement. He is encouraged to work up to his capacity by competing from day to day with his own record.

Results

Almost without exception, students having completed the one semester-hour credit course in developmental reading show astonishing, sometimes unbelievably large gains. They have increased their average initial reading rate from 250 words per minute to 700 words per minute with 80% to 90% comprehension. With the compelling force of the shadowscopes these same students have learned to read biographies, fiction, and other light materials at the rate of 2000 words per minute or better. The highest rates attained by a few individual students have been between 2400 and 3000 words per minute.

These exceptional students have read uncontrolled timed essays with a rate of 1200 words per minute and 90% to 100% comprehension. Students report having experienced the satisfaction of seeing their improved reading skills carry over into their study of college textbooks, library books, and magazines.

Re-testing of small groups of students one year, two years, or three years after completing the course in developmental reading has shown a remarkable degree of retention of skills acquired during the earlier training period. At this time a complete study is in order to determine scientifically the extent of reading retention or regression with time. If all college teachers, in a general sense, were teachers of reading, very little regression in reading skills during the college years of students may be expected.

Concluding Remarks

The six-year period in which the course in Developmental Reading was taught has resulted in teacher and student observations that may be of interest to our readers. We list them here in random order without consideration of their merit.

1. Mechanical devices are strong motivating factors for progress in the development of reading skills.
2. Mechanical devices are not a substitute for a teacher of reading.
3. A teacher of reading must have faith in her work, radiate enthusiasm, and be sincerely interested in the progress of each student.
4. The mastery of routine matters in the beginning of the course is of utmost importance for success in developmental reading.
5. Students showing lack of self-discipline and lack of earnest efforts in improving their reading skills tend to be among the drop-outs from college.
6. The course in developmental reading seems to be productive of situations useful in student counseling.
7. The interest of all college departments in the improvement of reading contributes much toward the retention and extension of reading skills acquired by the students in the freshman course of Developmental Reading.

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Reading Training in a Counseling Service

Reading improvement at the Chicago Undergraduate Division of the University of Illinois is provided through the Student Counseling Service. Students bring a wide variety of problems to the Counseling Service, and the Counseling Service has a wide variety of programs, among which are educational, vocational, personal, and study counseling. Both individual and group services are available.

Freshmen entering the Chicago Undergraduate Division directly from a secondary school are asked to take the Freshman Guidance Examinations and are given the opportunity to discuss the results with a counselor. The examination consists of measures of college aptitude, academic achievements, vocabulary and reading skills, and academic interests.

Each student who discusses the test results with a counselor is, therefore, told his reading ability and may join a reading group if he so desires. When appropriate, the counselor recommends to the student that he enroll in a reading group. Faculty members, also, make recommendations to certain students who are experiencing difficulty in their school work that they take reading. The advisor to foreign students uses the reading program as a referral resource to provide language experiences for some foreign students with deficiencies in English. The majority of students, however, are self-referred, and many are initially above average in college aptitude and reading skill.

Enrollment in a reading group is voluntary, as is attendance. No credit is given and students remain in a group only so long as they feel it meets their needs. Students may sign up for the groups during regular registration or at any other time during the semester. Groups are filled on a first-come first-served basis. New students are added during the semester as students drop out and vacancies occur.

The Cooperative English Reading Tests are administered under standardized conditions to the students as a part of the Freshman Guidance examinations. In order to obtain some idea of how the students function when speed is not a factor, the California Reading Tests are administered during the first reading group session on an informal, non-timed basis. The instructor considers both measures of reading skill in planning the instructional programs. Some students work primarily on developing vocabulary and comprehension skills, and others work primarily on developing increased speed of reading and flexibility of reading rates and on advanced comprehension skills. Periodic re-evaluations are made and the instructional goals are altered as needed.

The instruction is individualized, even for those working primarily on speed. Each student starts at his own initial narrative reading speed and progresses at his own rate. Each student starts at his own level on study-type reading and progresses to more difficult reading as his speed and comprehension increase.

As is necessary with such a program a variety of materials is available, and it may happen that at a single time no two persons would be working on the same material. The most widely used materials are those of the Lippincott *Reading for Meaning Series* by Guiler and Coleman; the Lippincott *Developmental Reading Workbook* by Guiler and Raeth; the

Heath *Efficient Reading Workbook* by Brown; the Holt *Increasing Reading Efficiency Workbook* by Miller; the Houghton Mifflin *College Developmental Reading Manual* by Wilking and Webster; the Columbia University *Study Type of Reading Exercises* by Strang; and the Harvard University *Selections for Improving Speed of Comprehension* by Perry and Whitlock. Equipment used includes the Model III SRA Reading Accelerator for narrative type paced reading, and a Tachistoscope for demonstration purposes. A Keystone Telebinocular and a Belltone Audiometer are also available.

Groups vary in size. During the summer of 1960 they averaged 12.4 students. (A partial analysis of the results of our summer 1960 program has been completed and is presented in another article.) Students meet once or twice per week depending upon their class schedules. Some students are seen individually by the reading counselor as well as attending the group sessions. These may be students with special educational problems or with primarily emotional problems for whom reading therapy is either a substitute for, or a form of, psychotherapy, or a first step into the Counseling Service toward psychotherapy. Some other students may be utilizing some other aspect of the Student Counseling Services coincidental with their reading instruction.

All in all the reading program attempts to be as flexible in its approaches to meeting the needs of its students, as it hopes the students will be flexible in their approaches to reading in meeting their needs as students.

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Magazine and Newspaper Reading of Junior College Freshmen

Out-of-school reading habits of junior college freshmen have not been studied extensively. It is possible that the reading habits of junior college freshmen and the freshmen of four-year colleges are similar, for both are in the thirteenth year of formal schooling. The research on reading interests at this level has been confined to college students, however. The Jones study[1] evaluated reading in periodicals and books. He found that seventy per cent of the men read *Life,* forty-five per cent *Reader's Digest,* and thirty-nine per cent the *Saturday Evening Post.* Ninety-eight per cent of the students answering the question were frequent or daily readers of the local newspaper. Local news interested eighty-four per cent; sports, eighty per cent; current affairs, eighty per cent; and comics, seventy-seven per cent among the items most often read.

Abraham,[2] in a forced choice questionnaire, found that *Life, Reader's Digest, Saturday Evening Post* and the *National Geographic Magazine* were most popular with college freshmen. *Life* was also the magazine most frequently subscribed to either by the student or the family. The study summarized the sections of the newspaper that were read most frequently, and found that front page news, the comics, picture features, political cartoons, sports, and editorials were of interest, in that order.

Junior college students' reading interests might be considered similar to those of college freshmen. This study was conducted to obtain data on the magazine and newspaper reading interests, and the time spent in reading newspapers and magazines of a junior college freshmen group. There has been limited research to determine the time spent in reading, and one purpose of this study was to add to the literature in this field.

The population of this study was 282 incoming freshmen at Hinds Junior College, Raymond, Mississippi. The majority of the students were from rural areas in Hinds, Rankin, and Warren Counties. Forty-eight per cent were from the cities of Vicksburg and Jackson. On the Otis Quick Scoring Test this group has a median I.Q. score of 105 with a range of 78-133. On the Cooperative Reading Test the group achieved a median of 38 and a range of 3-109.

An open end and self-devised questionnaire, the Cooperative Reading Test, and a battery of tests were administered to the incoming freshmen students by the school's guidance counselor. One hundred ninety-five students were referred to the reading clinic by the counselor because of their low scores on the Cooperative Reading Test. To validate the questionnaire, a personal interview was held with each student three weeks after being referred to the reading clinic. During the interview the same questionnaire was administered. When the results of the two questionnaires were compared, they were almost alike. Before the students answered the questionnaire as part of their orientation and again in the interview they were told their responses would not appear on or affect their college record.

In order to accomplish the major purpose of this study, four questions were posed. These questions will be stated and discussed separately.

1. Approximately how much time do you generally spend in reading the newspaper each day?

This question was answered by 257 students or 91 per cent. Twenty-five made no response. The mean time spent for those who answered was 25.8 minutes, with a standard deviation of 15.3.

2. Approximately how much time do you generally spend in reading magazines each day?

Fifty-four and five tenths per cent of the students answered this question with a mean of 30.55 and a standard deviation of 31.5. Only a few of the students answered the question, and most of the responses fell in the low time range, with a very few students at the high time range.

3. Rank in order the parts of the newspaper you enjoy most.

Eighty-five per cent of the students responded by listing their first preference as local news. Eighty-five per cent listed sports as their second preference. Eighty-one per cent chose current affairs as their third choice.

4. The magazine preference.
   A. What magazine do you receive in your home regularly?
      1. *Saturday Evening Post*
      2. *Look*
      3. *Life*
      4. *Reader's Digest*

B. Which magazine do you read regularly?
   1. *Saturday Evening Post*
   2. *Life*
   3. *Look*
   4. *Reader's Digest*

C. Which magazine do you read regularly at school?
   1. *Life*
   2. *Saturday Evening Post*
   3. *Reader's Digest*
   4. *Look*

The above data show the order of reading preferences of current magazines read by junior college freshmen. Three of the four magazines are similar in type, for they have a pictorial and editorial format.

Summary:

The responses to the four questions asked in the survey showed that the average junior college freshman reads newspapers 25.8 minutes per day; enjoyed reading newspaper, local news, sports, and current affairs in that order, as his preference. He preferred *Life, Look, Saturday Evening Post,* and *Reader's Digest* in that order as magazines for out-of-school reading.

Conclusions:

Within the limitation of the above study it seems reasonable to conclude that:

1. Senior college freshmen students preferred *The Saturday Evening Post, Look, Life,* and *Reader's Digest* to all other available magazines.
2. It appears that the interests in newspaper and magazine reading of junior college freshmen and the senior college freshmen are similar.
3. In this population, because of the wide range of time spent in reading, an average extra-curricular reading time for this group of students would be misleading. Some students read a great deal and a number read very little out of school.

Suggestions for further research:

Since this study was made with students of predominantly rural and semi-rural background, it would be helpful to compare these findings with those of a similar study using urban junior college freshmen.

The assumption is often made that reading habits change during the school careers of students. A "follow up" study of the out-of-school reading habits of college students at the end of each school year might be made, to see what changes occur as their education progresses.

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What is Being Done in College Reading Programs in Pennsylvania

As part of a doctoral dissertation, the writer investigated the nature, extent, and trends in reading programs and services for students in the seventy-five accredited colleges and universities of Pennsylvania for the academic year 1957-1958. A summary of the data gathered from the answers to the questionnaire provided by the forty-two schools having reading programs suggests a composite[1] college reading program with services similar to the following. The picture is not an exact one, but it represents the average reading program in one of the largest states, and it may be of value to reading workers across the nation, whether initiating a program or comparing with one already established.

This hypothetical college, either private or public, enrolls from 500 to 999 full-time students, and has a greater male than female population. The reading program is sponsored by the Education and Guidance Departments, and is called Reading Improvement or Developmental Reading. Open to all undergraduates, under certain restrictions of personnel and physical facilities, the course caters principally to freshmen who volunteer for the non-credit program. Occasionally members of the community at large avail themselves of the service.

Students especially in need of assistance are selected on the basis of standardized reading test scores. Classes meet for one hour weekly, for one semester of about fifteen weeks.

The course, which has been in existence for less than five years, costs the student twenty-five dollars. The fifty-one students who receive the training represent fewer than twenty per cent of the freshman class, and the grand total of ninety students includes less than five per cent of the total school enrollment.

The main objective of the program is to provide the student with the knowledge and skills needed to read college materials with adequate speed and comprehension at a higher level than when he enters the course. The program is characterized by a skills-drill approach to reading speed, comprehension, vocabulary, and study skills. There is a strong

belief that study habits can be improved through instruction and that better grades in the regular subjects will follow.

The program relies heavily upon one or two standardized reading tests for diagnosis and evaluation, but there is general dissatisfaction with the tests because of their limitations. Intelligence, interest, and personality test results are also used in diagnosing and evaluating each student, but not as frequently as tests of reading.

There is great dependence on teacher-prepared tests and exercises featuring study skills, exercises related to speed of reading and vocabulary, written and oral recall exercises, and critical reading tests. Home-made tests and exercises are developed and used as the need arises.

Instruction is given in groups of about eighteen students. Whenever possible, however, individual help is given. The emphasis is on improving comprehension, speed, and vocabulary with the greatest effort directed toward comprehension skills. About fifteen per cent of the class time is spent on direct instruction in study skills, such as attacking the assignment, summarizing, scheduling one's time, and outlining. The ultimate concern of the course is for efficiency in reading study-type material. To that end, the student is asked to practice on his textbook and to devote extra time in practicing what he has learned in the reading class.

A personal evaluation of reading and study abilities and habits is given to the student at the beginning and at the end of the course. Suggestions for correcting apparent weaknesses are offered during the personal conference.

Two or three commercial reading manuals or workbooks are used for practice on speed and comprehension. Vocabulary often receives extra attention through specially prepared teacher-made exercises. Charts and graphs are maintained by the student to help him visualize his progress. Frequently the student is asked to comment on his progress by filling in a self-evaluation form.

Two machines, the reading accelerator or controller, and the tachistoscope, are employed for developmental and motivational purposes. The telebinocular is also used, but it is concerned specifically with problems of vision rather than of reading. Less than ten per cent of the class time is devoted to machinery, however, and the student is expected to use the machinery on his own time.

Although the director of the reading program also has other duties, his principal efforts are spent on the reading course. He has two part-time assistants as his staff, and they spend about twenty per cent of their teaching time in the reading work. The reading teachers, who are assistant professors and hold the master's degree, have less than five years experience in the field of reading. Their specialized training has been obtained in graduate courses. They belong to one or two professional organizations, usually the International Reading Association or the National Council of Teachers of English.

Standardized reading tests are used when judging the effectiveness of the reading program. A comparison of scores made on equivalent forms given before and after the course is the method usually followed, although the student is frequently asked for his personal evaluation of his progress. No follow-up is made to determine the permanency of gains, nor is a formal, statistical study made to determine the effective-

ness of the course as a whole, although the effect of the course on regular grades is examined from time to time.

The director of the program feels that the course does achieve its objectives and is worthwhile.

The greatest weaknesses of the present program are lack of time and personnel, and the voluntary status of enrollment which fails to reach all needy students. The school would like to expand all phases of its present program, offer more individualized help, and open the course to all students, regardless of need. The greatest strengths of the present program include student satisfaction and motivation, and the giving of individual help when needed.

As noted previously, the foregoing is a hypothetical picture which does not point out the differences in policy and practice which characterize schools. The study, of which the composite program is only a part, not only noted similarities, but also emphasized differences which are equally important, but which do not appear in a composite picture of the "average" program of reading.

Recommendations Arising from the Study of Pennsylvania Programs

Certain recommendations for the continued improvement and development of Pennsylvania reading programs seemed to be justified by the study:

1. Means should be sought to make reading and study instruction available to more students, especially the betters readers, the upper classmen, and even the citizens of the community.
2. More evaluative studies should be made to ascertain the effectiveness of reading instruction in general, the permanency of its benefits, and the worth of particular phases of instruction.
3. Course objectives should be restated in greater detail and with specific reference to the activities which constitute the reading program and its relation to other student services, the faculty, and the administration.
4. Frequent assessment should be made of the relative values of methods, materials, mechanical aids, and means of evaluation.
5. A comprehensive study should be conducted of the professional training and qualifications of the college teacher of reading, with special attention directed toward developing standards for future instructors.
6. Means should be devised and implemented to facilitate the sharing of ideas, research, experiments, and materials among interested schools; and professional meetings should be held periodically to discuss the problems of college reading and study.

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Reference

[1] "Composite" refers to the practices most frequently found and most representative of the forty-two schools studied without regard to the effectiveness or validity of these practices. "Composite" in this sense refers to the total picture that the questionnaire analysis presents.

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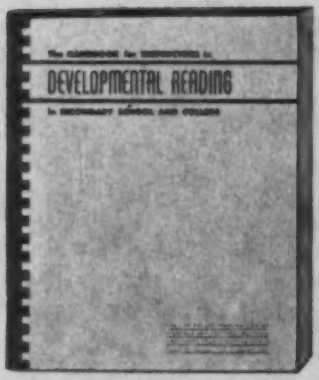

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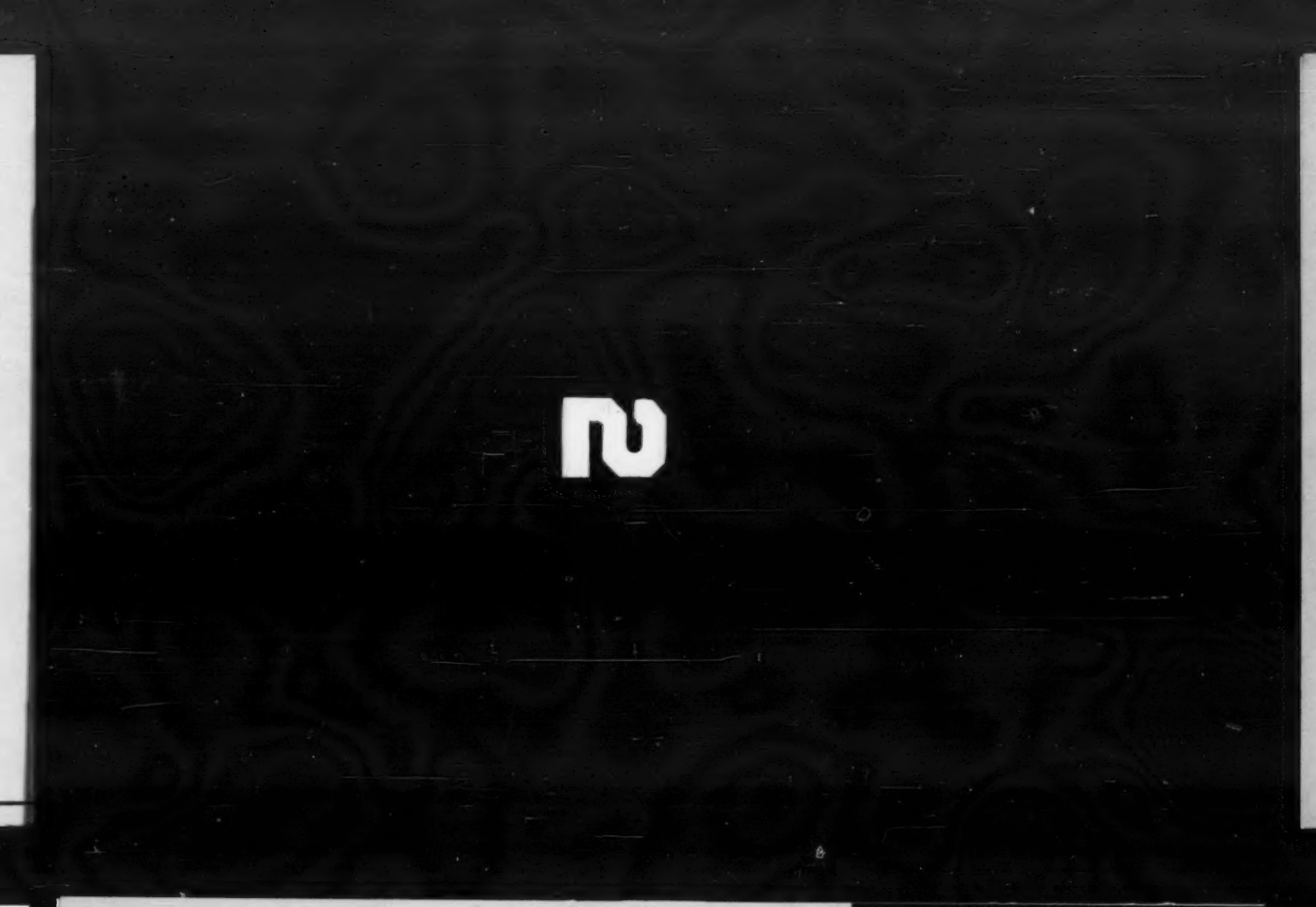
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